# *INDIA*

# COUNTRY PROFILE

## IMPLEMENTATION OF AGENDA 21: REVIEW OF PROGRESS MADE SINCE THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT, 1992

**Information Provided by the Government of India to the**
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*Division for Sustainable Development*
*The Information contained in this Country Profile is also available on the World Wide Web, as follows:*
*http://www.un.org/dpcsd/earthsummit*

# *INDIA*

**This country profile has been provided by:**

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**Date:** 19 December 1994

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*Note from the Secretariat: An effort has been made to present all country profiles within a common format, with an equal number of pages. However, where Governments have not provided information for the tables appended to Chapters 4 and 17, those tables have been omitted entirely in order to reduce the overall length of the profile and save paper. Consequently, there may be some minor inconsistencies among the formats of the different country profiles.*

*All statistics are rendered as provided by the respective Governments.*

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# ACRONYMS

| | |
|---|---|
| APELL | Awareness and Preparedness for Emergencies at Local Level |
| CFC | chlorofluorocarbon |
| CGIAR | Consultative Group on International Agriculture Research |
| CILSS | Permanent Inter-State Committee on Drought Control in the Sahel |
| EEZ | exclusive economic zone |
| ECA | Economic Commission for Africa |
| ECE | Economic Commission for Europe |
| ECLAC | Economic Commission for Latin America and the Caribbean |
| ELCI | Environmental Liaison Centre International |
| EMINWA | environmentally sound management of inland water |
| ESCAP | Economic and Social Commission for Asia and the Pacific |
| ESCWA | Economic and Social Commission for Western Asia |
| FAO | Food and Agriculture Organization of the United Nations |
| GATT | General Agreement on Tariffs and Trade |
| GAW | Global Atmosphere Watch (WMO) |
| GEF | Global Environment Facility |
| GEMS | Global Environmental Monitoring System (UNEP) |
| GEMS/WATER | Global Water Quality Monitoring Programme |
| GESAMP | Joint Group of Experts on the Scientific Aspects of Marine Pollution |
| GIPME | Global Investigation of Pollution in Marine Environment (UNESCO) |
| GIS | Geographical Information System |
| GLOBE | Global Legislators Organisation for a Balanced Environment |
| GOS | Global Observing System (WMO/WWW) |
| GRID | Global Resource Information Database |
| GSP | generalized system of preferences |
| HIV | human immunodeficiency virus |
| IAEA | International Atomic Energy Agency |
| IAP-WASAD | International Action Programme on Water and Sustainable Agricultural Development |
| IARC | International Agency for Research on Cancer |
| IBSRAM | International Board of Soil Resources and Management |
| ICCA | International Council of Chemical Associations |
| ICES | International Council for the Exploration of the Sea |
| ICPIC | International Cleaner Production Information Clearing House |
| ICSC | International Civil Service Commission |
| ICSU | International Council of Scientific Unions |
| IEEA | Integrated environmental and economic accounting |
| IFAD | International Fund for Agricultural Development |
| IGADD | Intergovernmental Authority for Drought and Development |
| IGBP | International Geosphere-Biosphere Programme (ICSU) |
| IGBP/START | International Geosphere-Biosphere Programme/Global Change System for Analysis, Research and Training |
| ILO | International Labour Organisation |
| IMF | International Monetary Fund |
| IMO | International Maritime Organization |
| INFOTERRA | International Environment Information system (UNEP) |
| IOC | Intergovernmental Oceanographic Commission |
| IPCC | Intergovernmental Panel on Climate Change |
| IPCS | International Programme on Chemical Safety |
| IPM | integrated pest management |
| IRPTC | International Register of Potentially Toxic Chemicals |
| ITC | International Tin Council |
| ITTO | International Tropical Timber Organization |

## ACRONYMS (Cont'd)

| | |
|---|---|
| IUCN | International Union for Conservation of Nature and Natural Resources |
| MARPOL | International Convention for the Prevention of Pollution from Ships |
| OECD | Organisation for Economic Cooperation and Development |
| PGRFA | plant genetic resources for agriculture |
| PIC | prior informed consent procedure |
| SADCC | South African Development Co-ordination Conference |
| SARD | sustainable agriculture and rural development |
| UNCTAD | United Nations Conference on Trade and Development |
| UNDP | United Nations Development Programme |
| UNDRO | Office of the United Nations Disaster Relief Coordinator |
| UNEP | United Nations Environment Programme |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |
| UNFPA | United Nations Population Fund |
| UNICEF | United Nations Children's Fund |
| UNIDO | United Nations Industrial Development Organization |
| UNU | United Nations University |
| WCP | World Climate Programme (WMO/UNEP/ICSU/UNESCO) |
| WFC | World Food Council |
| WHO | World Health Organization |
| WMO | World Meteorological Organization |
| WWF | World Wide Fund for Nature (also called World Wildlife Fund) |
| WWW | World Weather Watch (WMO) |

# OVERVIEW

India has a land frontier of 15,200 kms., a sea coast length of 7, 500 kms. It is the second most populous and seventh largest country in the world. The total geographical area of the country is 3.28 million sq. kms. The total forest area in the country is 0.76 million sq. kms. which constitutes 23.2 per cent of its total geographical area.

Over 45,000 plant species are found in the country. The vascular flora which form the conspicuous vegetation cover itself comprises about 15,000 species. Several thousands of them are endemic to this country and they have so far not been reported from anywhere else in the world. The biological diversity of the country is so rich that it may play a very important and crucial role in future for the survival of entire mankind if it is conserved and used with the utmost care. Today, two hot spots in biological diversity have been identified in the country, namely, Eastern Himalayan region and the Western Ghats.

Since independence, India has paved the way through democracy for social development. India has been implementing national strategies and plans through various multi-faceted development schemes and programmes. These programmes, backed by large human and financial resources, have been successful in achieving the predetermined goals in the areas of sustained economic growth, education, health, sanitation, housing and employment, as well as other related fields, so that minimum needs are duly taken care of and a decent standard of life attained.

Eradication of poverty and provision of basic minimum services are integral elements of any strategy to improve the quality of life. No developmental process can be sustainable unless it leads to visible and widespread improvement in these areas. India believes that poverty anywhere is a threat to prosperity everywhere and that concerted international action is essential to ensure global prosperity and better standards of life for all. Based on this belief, India has actively played a positive, constructive role, inter alia, in the deliberations of the UN, its specialised agencies and various intergovernmental mechanisms.

The Eighth Plan (1992-1997) had identified "human development" as its main focus. During this plan period, the indicators of social development have shown a significant improvement. 1995-96 witnessed a very satisfactory growth rate in GDP of 7.1 per cent. The momentum of growth has been maintained in 1996-1997, thus providing increasing evidence that the growth potential has improved as a result of the processes of deregulation and globalisation initiated by the government.

The Ninth plan (1997-2002) is being launched in the 50th year of India's Independence. The objectives of the Ninth Plan arising from the Common Minimum Programme of the Government are as follows:

- Priority to agriculture and rural development with a view to generating adequate productive employment and eradication of poverty;
- Accelerating the growth rate of the economy with stable prices;
- Ensuring food and nutritional security for all, particularly the vulnerable sections of society;
- Providing the basic minimum services of safe drinking water, primary health care facilities, universal primary education, shelter, and connectivity to all in a time bound manner:
- Containing the growth rate of population;
- Ensuring environmental sustainability of the development process through social mobilisation and participation of people at all levels;
- Empowerment of women and socially disadvantaged groups such as Scheduled Castes, Scheduled Tribes and Other Backward Classes and Minorities as agents of socio-economic change and development;
- Promoting and developing people's participatory institutions like Panchayati Raj institutions, cooperatives and self-help groups;
- Strengthening efforts to build self-reliance.

## OVERVIEW CONT'D

India has signed and ratified various international conventions and agreements on environment and related issues and has been effectively implementing them. India realises the vital need for international cooperation, bilateral and multilateral programmes and regional initiatives in dealing with issues of environment and development. India believes that regional as well as global environment problems can only be solved through international cooperation and appropriate mechanisms. As an active participant in the international debate on environment issues, through the Rio process, negotiation of the conventions and restructuring of the Global Environment Facility, India remains concerned about the inadequate availability of funds for the financing of sustainable development.

In the Indian context, projects and programmes for sustainable development call for considerable coordination given the complexity of the many organisations, both private and governmental, that are involved. This report outlines some of the major initiatives undertaken for the implementation of Agenda 21 at the national level as also the priorities for immediate action to achieve the goals of sustained economic growth and sustainable development.

# FACT SHEET

## NAME OF COUNTRY: INDIA

**1. Name of Key National Sustainable Development Coordination Mechanism(s)/Council(s).**
National Environmental Council

**Contact point (Name, Title, Office):** Mr. N. R. Krishnan, Secretary, Ministry of Environment and Forests
**Telephone:** 4360721 **Fax:** 4360678 **e-mail:**
**Mailing address:** Paryavaran Bhawwan, C.G.O. Complex, Lodi Road, New Delhi 110003, India

**2. Membership/Composition/Chairperson:**

**2a. List of ministries and agencies involved:** Prime Minister (Chairman); Minister of Environment and Forests (Vice-Chairman);
Members: Secretary, Ministry of Environment and Forests; Inspector General of Forests, Ministry of Environment and Forests; Secretary, Department of Power; Secretary, Ministry of Surface Transport; Secretary, Ministry of Industry; Secretary, Department of Minerals and Petro-Chemist; Secretary, Department of Legal Affairs, Secretary, Department of Agriculture and Cooperation; Secretary, Ministry of Rural Development; Secretary, Ministry of Urban Development; Finance Secretary; Secretary, Ministry of Non-Conventional Energy Sources; Secretary, Ministry of Mines; Secretary, Ministry of Mines; Secretary, Ministry of Information and Broadcasting; Director General, Indian Council for Forestry Research and Education; Director General, Indian Council of Scientific and Industrial Research; Director General, Indian Council of Medical Research; Director General, Indian Council of Medical Research; Director General, Indian Council of Agricultural Research; Director General, Department of Tourism; Director General, Archeological Survey of India; Director, Industrial Toxicological Research Centre; Director, Botanical Survey of India; Director, Zoological Survey of India; Director, National Institute of Oceanography; Director, National Environment Engineering Research Institute; Director, Tata Energy Research Institute; Director, Indian Institute of Forest Management; Director, Wildlife Institute of India; Director, G.B. Pant Himalavan, Environment and Development Institute; Director, National Museum of Natural History; Chairman, Central Pollution Control Board; Chairman, National Thermal Power Corporation; Chairman, National Bank for Agriculture & Rural Development; Chairman, University Grants Commission; Member of Planning Commission, dealing with Environment; President, Federation of Indian Chambers of Commerce and Industry; President, Associated Chambers of Commerce and Industry; President, Associated Chambers of Commerce & Industry of India; President, Confederation of Indian Industry; Chairman, Federation of Small Industry; Chairman, National Hotel Federation; Chairman, World Wide Fund for Nature India; Chairman, National Consumers' Federation (Any 5 from amongst persons who have been awarded prizes/fellowships by the Ministry for special achievements in Forestry or pollution control: Shri Sant Kumar Bishnoi, Shri Chandi Prasad Bhatt, Sri Annasaheb Hazare, Shri M.C. Mehta, Smt. Vandana Shiva); 3 members of the Lok Sabha to be nominated by the Ministry of Parliamentary Affairs; 2 members of the Rajya Sabha to be nominated by the Ministry of Parliamentary Affairs; 5 representatives of Non-Governmental Organizations: (Centre for Science & Environment), Shri Anil Agarawal, (Dev. Alternatives), Shri Ashok Khosla, (Bombay Env. Action Group), Shri Shyam Chainani, (CPR Environment Centre) Smt. Nandita Krishna; (Sulabh International) Shri B. Pathak; 3 Eminent Environmentalists: Shri Duleep Mathai, Shri B.B. Vohra, Shri M.N. Buch; 3 Eminent Scientists: Shri M.S. Swaminathan, Shri S. Ramachandran, Shri Madhav Gadgil; 3 Eminent Journalists/Media Persons: Shri Daryll D'Monte, Shri Vir Sanghvi, Shri Ramesh Agarwal; 3 Eminent Industrialists: Shri H.S. Singhania, Shri A.L. Muthaiah, Shri Ratan Tata; Non-official members from the following Authorities/Boards to be nominated by the Chairman: National Afforestation and Eco-Development Board, Shri Biplab Basu; National Waste Management Council, Mrs. Usha Rai; Animal Welfare Board, Shri Bittoo Sehgal; Central Zoo authority, Shri Ashok Kumar; Central Ganga Authority, Dr. T.N. Khoshoo; Central Board of Forestry (not constituted as yet); Indian Board for Wildlife, Shri Deb Roy; Environment Ministers of all States/UTs.

**2b. Names of para-statal bodies and institutions involved, as well as participating of academic and private sector bodies:** as 2(a)

**2c. Names of non-governmental organizations involved:**

**3. Mandate role of above mechanism/council:** The Council will act as a 'think tank' on important environment policy matters and also provide planning and other inputs in an advisory capacity on issues/matters placed before it by MOEF.

**4. If available, attach a diagram (organization chart) showing national coordination structure and linkages between ministries:**

**AGENDA 21 CHAPTER 2:** **INTERNATIONAL COOPERATION TO ACCELERATE SUSTAINABLE DEVELOPMENT IN DEVELOPING COUNTRIES AND RELATED DOMESTIC POLICIES (with special emphasis on TRADE)**

**NATIONAL PRIORITY:**

**STATUS REPORT:** India realises the vital need for international cooperation - bilateral, multilateral and regional initiatives - in implementing Agenda 21. India is committed to developing and strengthening the process of international cooperation, which would cover not only cooperation among governments and international agencies but also among other major actors such as the private sector, civil society and voluntary organisations. The international community should develop the appropriate enabling environment at the international level through the establishment of open, equitable, rule based, cooperative, non-discriminatory and mutually beneficial economic environment. The international community should take into account the special needs of the developing countries, in line with the concept of common but differentiated responsibilities which was affirmed in Agenda 21. The international community should, therefore, aim to attain the target of 0.7 per cent of GNP of developed countries towards Official Development Assistance (ODA). There is also an urgent need for the provision of new and additional financial resources in a predictable and assured basis from the international community to developing countries. These resources should be available commensurate with the needs and priorities of developing countries and without any conditionalities.

Restrictive trade barriers and practices must be curtailed and tariffs on exports of products and services from developing countries reduced so that the benefits of global economic growth are equitably distributed among all countries. Greater trading opportunities can enable developing countries to invest more in environmental protection.

India is among the countries which are in the vanguard of environmental protection. India has environmental standards for products and processes, has environmental impact assessment, and has introduced environmental audit as an eco-labelling scheme. India believes that environmentally harmful processes should be stopped and that over-exploitation of non-renewable resources should be controlled, but the solution lies not in unilaterally banning trade, but rather in transferring technology and offering prices to developing countries for such commodities, which would not then necessitate their overexploitation or jeopardise their development priorities.

The trade policy components of the reform process undertaken since July 1991 have been motivated by a full recognition of the important role that trade can play in promoting sustained economic growth in the context of sustainable development. The utilisation of the expanded scope for specialising in areas of comparitive advantage is manifest in the improved growth performance of the economy. Furthermore, while exports have vigorously responded to the removal of the anti-export bias of a protectionist environment, domestic industry appears to have been stimulated by the expanded availability of imported inputs and capital goods, as well as the challenge of competing in the international market place. The positive response of Indian industry to deregulation is amply demonstrated by the capital goods sector. The capital goods industry which witnessed a negative growth of 12.8 per cent in 1991-92, registered an average growth of about 23 per cent during 1994-96.

India has had modest, but increasing, success in attracting a growing part of private capital flows. Furthermore, much of these private capital inflows into India has been of the non-debt creating variety, and helped boost the balance of payments as well as the availability of investable resources in the economy. The international community is very positive about India's effort to achieve a high rate of growth.

India believes that in order to make trade and environment mutually supportive, an open multilateral trading system makes possible a more efficient allocation and use of resources and thereby contributes to an increase in production and incomes and lessening demands on the environment. It also provides additional resources needed for economic growth and development and improved environmental protection. Trade measures should be applied for environmental purposes only when they address the root causes of environmental degradation so as not to result in an unjustified restriction on trade. Further, environmental standards valid for developed countries may have unwarranted social and economic cost in

## Status Cont'd

developing countries. The WTO Committee on Trade and Environment has undertaken many of these activities. In its two years work, it has promoted a dialogue between trade, development and environment communities and stressed the need for transparency, avoidance of unilateral action to deal with environmental challenges outside the jurisdiction of the importing country and avoidance of the use of trade restrictions or distortions as a means to offset the difference in costs arising from environmental distortions and protectionism. Further work required in the CTE and UNCTAD on a priority basis should include elaborate studies for better understanding of the relationship between trade and environment, particularly for sustainable development in the developing countries.

Today, the world stands at a cross road of history. Five years after Rio, and as we approach the third millennium, it falls on us to create a world where there is greater justice and lesser deprivation. Any models based on uneven rewards will not be supported by those members who are not beneficiaries. Credibility and realisation of the potential of all international activities can only be achieved through the full participation of all countries in their formulation, implementation and in enjoying the benefits to be derived from them. India is willing to work with all countries in a constructive manner to realise our common aims.

In an effort to remove the anti-export bias of existent policies, improve efficiency of resource allocation as well as competitiveness of domestic markets, India has made steady progress in eliminating quantitative restrictions, licensing and discretionary controls over imports since 1991. Imports of capital goods, raw materials and components have been delicensed, tariffs on such imports have been reduced substantially, and tariff categories have been reclassified with an eye on streamlining and simplification. As a result, all goods can now be freely imported and exported, except those belonging to two negative lists.

With the objective of accelerating the pace of reforms, sustaining high export growth and enhancing the opportunities for the domestic economy's participation in the dynamics of foreign trade, The EXIM Policy 1992-97 has been reviewed and revised in several ways during the current year to further phase out quantitative and qualitative restrictions. The revisions include measures for trade promotion, as well as further simplification of procedures.

A number of items from the negative/restricted list have been permitted free for import and many others have been shifted to the list of items which can be imported under the special import license (SIL) scheme. For example, 40 items were removed from the negative list and made freely importable and 14 others shifted to SIL list on 21st August, 1996. Similarly, a notification was issued on 13th September, 1996, whereby two restricted items were made free for imports and 55 restricted items were permitted against SIL. By another notification issued on 10th February, 1997, as many as 69 items in the SIL list have been moved to the free list and another 95 items have been taken off the restricted list and placed on the SIL list.

Minerals and Metals Trading Corporation (MMTC) was the only canalising agency for import of urea until October 1, 1996. In an effort to bring about progressive decanalisation, the State Trading Corporation (STC) and Indian Potash Ltd. (IPL), apart from the MMTC, were also authorised to import urea from October 1, 1996.

Given the domestic demand/supply imbalance in wheat in the current year, export of wheat products, which had been earlier allowed without any restriction, was subjected to a quantitative ceiling from October 1, 1996. For the period October, 1996 to March, 1997, a ceiling of 0.15 million tonnes has been announced for export of wheat products.

## Cross-Sectoral Issues

1. **Decision-Making Structure:** No information.

2. **Capacity-Building/Technology Issues:** To give a fillip to indigenous manufacturers of capital goods and to help improve infrastructure facilities in the power sector, the supply of capital goods to power projects which are done under the procedure of competitive bidding have been made eligible for refund of terminal excise duty as also for special import licenses.

3. **Major Groups:** To encourage eradication of child labour in the carpet industry and for rehabilitation of carpet weavers, the export of hand-knitted carpets and floor coverings excluding cotton durries and floor coverings, was again subjected to production of Registration-cum-Membership certificate from the Carpet Export Promotion Council, New Delhi, from August 1, 1996.

4. **Finance:** No information.

5. **Regional/International Cooperation:** In an effort to promote trade with Latin America, a notification has listed forty-three South American countries, and made exports undertaken after April 1, 1996 to these countries eligible for double weightage benefit for recognition as export house/trading house/star trading house/super star trading house.

In accordance with the terms of the General Agreement on Tariffs and Trade, a country is required to lift quantitative restrictions on imports imposed for Balance of Payments reasons when the position improves. As the position of foreign exchange reserves is comfortable, India is bound to phase out quantitative restrictions in respect of all items.

| India: Share of World Trade | | | |
|---|---|---|---|
| Year | Exports | Imports | Trade |
| 1950 | 1.85 | 1.71 | 1.78 |
| 1960 | 1.03 | 1.69 | 1.36 |
| 1970 | 0.64 | 0.65 | 0.65 |
| 1980 | 0.42 | 0.72 | 0.57 |
| 1990 | 0.52 | 0.66 | 0.59 |
| 1991 | 0.5 | 0.56 | 0.53 |
| 1992 | 0.53 | 0.61 | 0.57 |
| 1993 | 0.58 | 0.6 | 0.59 |
| 1994 | 0.6 | 0.63 | 0.61 |

Source: UNCTAD Handbook of International Trade and Development Statistics, 1994, United Nations, 1995.

## AGENDA 21 CHAPTER 3: COMBATING POVERTY

**NATIONAL PRIORITY:**

**STATUS REPORT:**

- Focus of national strategy
- Highlight activities aimed at the poor and linkages to the environment

Rio Declaration on environment and development adopted at UNCED in 1992 states, inter alia, that "Eradicating poverty and reducing disparities in living standards in different parts of the world are essential to achieve sustainable development and meet the needs of majority of people." Agenda 21, the blueprint for sustainable development, emphasises that the actions of individual governments in combating poverty require the support of the international community as the struggle against poverty is a shared responsibility of all countries. A favourable international economic environment, combined with financial and technical assistance, favourable terms of trade, debt relief, access to markets and transfer of Environmentally Sound Technologies, will help pave the way for poverty eradication and sustainable development. Poverty has so many causes that no single solution will solve the problem in all countries. Poverty eradication remains the overriding priority for India. The challenge is to find a development path that is not only sustainable but is also socially just and culturally acceptable.

Many of the programmes and activities outlined in the Programme of Action adopted at the World Summit for Social Development held in Copenhagen in 1995 are already in place in India, particularly the policies geared towards eradication of poverty, generation of employment, etc. India has taken a range of measures to implement the Programme of Action at the national level. India has established a National Committee for Social Development in the Planning Commission and the State Governments are also being encouraged to establish similar committees. While the primary responsibility for implementation of the Programme of Action rests with the States, the national efforts would need to be enforced and supplemented by the efforts of the international community. It is, therefore, necessary for the international community to dedicate itself to the task of fulfilling the commitments undertaken at Copenhagen.

The Government of India has adopted various schemes and programmes for accelerating the rate of economic growth, eradication of rural poverty through wage employment and self-employment, redistribution of land and security of land tenures, enhanced purview for Minimum Needs Programme, protection of minorities and availability of opportunity for socio-economic uplift, and infrastructural development for uplift of urban poor.

India has a three pronged strategy for poverty eradication:

Economic growth and overall development;
ii) Human development with emphasis on health, education and minimum needs, including protection of human rights and raising the social status of the weak and the poor; and

iii) Directly targeted programmes for poverty alleviation through employment generation, training and building up asset endowment of the poor.

The pro-poor components of the Plan are fully integrated with the overall development plan of the country and the pro-poor perspective is fully harmonised with the strategy of market-oriented open-economy industrialisation and the requirements of structural adjustments. Economic growth enables expansion of productive employment and also generation of resources which are vital to support any form of intervention for eradication of poverty. Since 1991, India has undertaken trade reforms, financial sector reforms, and removal of controls and bottlenecks. These reforms were introduced with the objective of improving efficiency and productivity, in order to further accelerate growth by improving competitiveness in international markets. The ultimate objective of such reforms is to ensure expeditious eradication of poverty. Adequate precaution was taken to protect the poorer sections of society against short term effects of these changes. This has been done through increasing the resources for programmes for the poor in the National Plan and sharpening the focus of such programmes on the poor.

## Status Cont'd

Removal of poverty has always been one of the main objectives of India's Five Year Plans. The Eighth Five Year Plan of India (1992-97) envisaged human development as the ultimate goal of the development process. Towards the achievement of this goal, employment generation, population control, illiteracy, education, health, provision of drinking water and adequate food are listed as priorities.

The estimated proportion of population below the poverty line is sensitive to the estimation procedure adopted. However, according to a variety of estimates, the decline in the proportion of population below the poverty line was between 2.9 and 8.7 percentage points in the six year period ending 1993-94. The appropriate methodology for estimation of poverty is also currently under review by the Planning Commission.

The Common Minimum Programme (CMP) announced by the Government in June, 1996 has shown strong commitment to the development of Social Sectors for achieving distributive justice. The Government has also accorded high priority to poverty alleviation programmes. The Central Plan allocations for social sectors and poverty alleviation programmes show highest increase in 1996-97 over 1995-96. The weaker sections of society have been given importance in special programmes of poverty alleviation and employment as well as in several other programmes. The Public Distribution System has been recently streamlined recently in order to target the poorer sections of the population. Poverty alleviation programme is one of the main thrust areas of the Common Minimum Programme. A strategic attack on poverty is an important element of the development policy pursued by the Government. A two- pronged attack on rural and urban poverty has been launched through wage employment and credit linked self-employment schemes.

Basic Minimum Services

The Conference of Chief Ministers on Basic Minimum Services held at New Delhi during 4-5 July, 1996, recommended the adoption of the following objectives with an all out effort for their attainment by the year 2000.

- 100 per cent coverage of provision of safe drinking water in rural and urban areas.
- 100 per cent coverage of primary health service facilities in rural and urban areas.
- Universalisation of primary education.
- Provision of Public Housing Assistance to all shelterless poor families.
- Extension of Mid-day Meal Programme in primary schools to all rural blocks and urban slums and disadvantaged sections.
- Provision of connectivity to all unconnected villages and habitations.
- Streamlining the Public Distribution System targeted to families below the poverty line.

The Conference recommended that all centrally sponsored schemes relating to the above seven Basic Minimum Services should be continued and the States' annual entitlement should be increased by 15-20 per cent every year. It also endorsed that the funds allocated for these Basic Minimum Services in the States' and the Central Plan should not be diverted.

The Budget for 1996-97 provides an additional amount of Rs. 24.66 billion with a view to increase the availability of funds for State level social programmes for safe drinking water, primary education, primary health, housing, mid-day meals for primary school children, rural roads and strengthening public distribution system.

India has set a target for the eradication of absolute poverty by the year 2002. Some of the new initiatives in the area of poverty eradication and social sector include:

i) National Social Assistance Programme (NSAP). This covers:
- National Old Age Pension Scheme (NOAPS).
- National Family Benefit Scheme (NFBS).
- National Maternity Benefit Scheme (NMBS).

### Status Cont'd

ii) Nutritional Support Primary Education (NSPE). This is mid-day meal scheme
for school children and covers all Government, local body and private aided schools (classes I to V).
iii) Indira Mahila Yojana. This has three components:

- Convergence of inter-sectoral activities.
- Income generating activities.
- Sustained process of awareness generation/education.

iv) Pension Scheme for Provident Fund Subscribers (PSPFS).
v) Social Security for Construction Workers.
vi) Rural Group Life Insurance Scheme. This scheme has a subsidised policy
available to one member of a rural poor family below the poverty line. The subsidy is to the extent of 50 percent.
vii) Prime Minister's Integrated Urban Poverty Eradication Programme.
viii) Pulse Polio Immunisation Programme.
ix) Revamped Rural Employment Programme. There are four programmes under this category

- Employment Assurance Scheme (EAS).
- Jawahar Rozgar Yojana (JRY).
- Indira Awaas Yojana (IAY).
- Million Wells Scheme (MWS).

x) Revamped Integrated Rural Development Programme.

**Centre Plan Outlay for Major Schemes of Social Sectors**

| Ministry/Department/ Scheme | 1993-94 | | 1994-95 | | 1995-96 | | 1996-97 | | Percent Change overBEs | |
|---|---|---|---|---|---|---|---|---|---|---|
| | (BE) | (Actual) | (BE) | (RE) | (BE) | (RE) | (BE) | 1996-97/ 1995-96 | 1996-97 1994-95 | 1996-97/ 1993-94 |
| EDUCATION | 13100 | 12320 | 15410 | 15690 | 18250 | 25040 | 33880 | 85.64 | 119.86 | 158.63 |
| Elementary Education | 4420 | 3870 | 5230 | 5110 | 6510 | 14430 | 22640 | 247.77 | 332.89 | 412.22 |
| Adult Education | 1780 | 1660 | 2140 | 2110 | 2340 | 1700 | 2250 | -3.85 | 5.14 | 26.40 |
| HEALTH | 4830 | 4020 | 5780 | 5990 | 6700 | 6490 | 8150 | 21.64 | 41.00 | 68.74 |
| FAMILY WELFARE | 12700 | 15230 | 14300 | 14300 | 15810 | 15060 | 15350 | -2.91 | 7.34 | 20.87 |
| WOMEN AND CHILD DEVELOPMENT | 5690 | 5730 | 6620 | 6620 | 7300 | 8210 | 8470 | 16.03 | 27.95 | 48.86 |
| Integrated Child Development Services | 4740 | 4740 | 5370 | 5370 | 5880 | 6690 | 6820 | 15.99 | 27.00 | 43.88 |
| WELFARE | 6300 | 7470 | 7050 | 8040 | 9400 | 9400 | 9400 | 0.00 | 33.33 | 49.21 |
| RURAL DEVELOPMENT | 50100 | 54370 | 70100 | 73200 | 77000 | 82480 | 86320 | 12.10 | 23.14 | 72.30 |
| Jawahar Rozgar Yojna (JRY) | 33060 | 33060 | 38550 | 35350 | 38620 | 29550 | 18650 | -51.71 | 51.62 | -43.59 |
| Employment Assurance Scheme | * | 4380 | 12000 | 11400 | 15700 | 18160 | 19700 | 25.48 | 64.17 | |
| National Social Assistance Programme | | | | | | 5500 | 9320 | | | |
| Integrated Rural Development Programme | 6540 | 6570 | 6750 | 6750 | 6560 | 6560 | 6560 | 0.00 | -2.81 | 0.31 |
| Rural Water Supply and Sanitation | 7700 | 7700 | 9500 | 8700 | 11700 | 11700 | 11700 | 0.00 | 23.16 | 51.95 |
| Indira Awas Yojna | | | | | 4920 | 11940 | | | | |
| Million Wells Scheme | | | | | 2110 | 4480 | | | | |
| OTHER PROGRAMMES | | | | | | | | | | |
| Nehru Rozgar Yojna (NRY) | 750 | 750 | 700 | 700 | 710 | 680 | 710 | 0.00 | 1.43 | -5.33 |
| Scheme for Self Employment for Educated Unemployed Youth (SEEUY) | 400 | 380 | ** | | | | | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Prime Minister's Rozgar Yojna (PMRY) | * | 350 | 1450 | 1250 | 1450 | 1450 | 1450 | 0.00 | 0.00 | |

* Provision made at RE stage as the schemes were launched on October 2, 1993. RE for EAS was Rs. 6000 million and Rs 350 million for PMRY.

** Integrated with PMRY.

** BE as per the Department of Rural Development and Planning Commission. It was revised upward within total BE for the Dept. of Rural Development. In the Budget Papers BE were Rs. 6300 million in 1993-94, Rs. 6240 million in 1994-95, Rs. 6400 million each in 1995-96 and 1996-97.

+ The scheme was announced on 15th August 1995, Rs. 5500 million was provided at RE stage

+ + The Indira Awas Yojana (IAY) and the Million Wells Scheme (MWS) were earlier the sub schemes of JRY. From 1.1.1996 they have become separate schemes.

▲ The substantial Increase is mainly due to Nutritional Support to Primary Education for which an outlay of Rs. 6120 million was provided in the revised budget for 1995-96 and the same has been raised to Rs.1400 million in 1996-97 (BE).

Source: Budget Papers and concerned Departments.

| Performance of Special Employment and Poverty Alleviation Programmes (in million) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Programmes** | **1993-94** | | **1994-95** | | **1995-96** | | **1996-97 (upto Oct.,96)** | |
| | **Target** | **Achieve ment** | **Target** | **Achieve ment** | **Target** | **Achieve ment** | **Target** | **Achieve ment** |
| **Programmes in Rural Areas** | | | | | | | | |
| JRY Mandays of employment generated | 1038.326 | 1025.84 | 986.545 | 951.707 | 848.005 | 895.825 | 428.858 | 137.825* |
| EAS Mandays of employment generated | ** | 49.474 | ** | 273.956 | ** | 346.527 | ** | 134.72 |
| IDRP Families assisted | 2.57 | 2.539 | 2.115 | 2.215 | ** | 2.090(P) | ** | 0.481* |
| TRYSEM Youths Trained | 0.35 | .303 | 0.318 | 0.281 | 0.35 | 0.287 | ** | 0.103•• |
| DWCRA (a) Groups formed | 0.011 | 0.015 | 0.013 | 0.038 | 0.03 | 0.038 | 0.03 | 0.011* |
| DWCRA (b) Membership | - | 0.269 | - | 0.592 | - | 0.697 | ** | 0.361* |
| **Programmes in Urban Areas** | | | | | | | | |
| NRY (a) Families assisted | 0.125 | 0.152 | 0.102 | 0.125 | 0.117 | 0.125$ | 0.117 | 0.056 |
| (b) Mandays of employment generated | 14.223 | 12.367 | 10.612 | 6.396 | 11.448 | 9.295$ | 13.576 | 4.463 |
| (c) Persons trained | 0.058 | 0.048 | 0.049 | 0.037 | 0.055 | 0.067$ | 0.117 | 0.036 |
| **Other Programmes** | | | | | | | | |
| SEEUY - Beneficiaries | 0.126 | 0.056 | @ | | | | | |
| PMRY (a) Micro Enterprises | 0.04 | 0.032 | 0.22 | 0.198 | 0.26** | 0.299(P) | 0.22 | 0.102*** |
| (b) Employment generated $ | 0.08 | 0.045 | 0.44 | 0.283 | 0.520** | 0.375(P) | 0.44 | 0.050*** |

P- Provisional
* - Upto Sept.96
•• - Upto Aug.96
** - Targets are not fixed as it is need based *** - Up to Nov.96
@ - Integrated with PMRY

@ - Integrated with PMRY
S - Estimated @ 2 per case disbursed for the concerned programme year
xx - Including Backlog

**Plan Outlays in Social and Infrastructure Sectors during the Seventh and Eighth Plans**
**(Rs. million at 1991-92 prices)**

| | Seventh Plan (1985-90) | Eighth Plan (1992-97) | %age increase |
|---|---|---|---|
| Social Sector | 715470 | 1134370 | 58.6 |
| Infrastructure Sector | 1546440 | 1965970 | 27.1 |
| Total Plan | 3351420 | 43441000 | 29.5 |

## Cross-Sectoral Issues

1. **Decision-Making Structure:** No information.

2. **Capacity-Building/Technology Issues:** No information.

3. **Major Groups:** No information.

4. **Finance:** No information.

5. **Regional/International Cooperation:** No information.

NB: Developed countries, where domestic poverty alleviation is not a major concern may wish to briefly describe their position regarding global poverty alleviation.

## STATISTICAL DATA/INDICATORS

| | 1985 | 1990 | 1992 | Latest 199 |
|---|---|---|---|---|
| Unemployment (%) | | | | |
| Population living in absolute poverty | | | | |
| Public spending on social sector % | | | | |
| Other data | | | | |

## AGENDA 21 CHAPTER 4: CHANGING CONSUMPTION PATTERNS

**NATIONAL PRIORITY:**

**STATUS REPORT:**

- **National policy objectives/focus** Not long ago, limits to growth were seen in the inexhaustible nature of material resources. Advancement in technology pushed the outer limit of growth in consumption. Protection and conservation of environment requires intra-generational equity and the need to curb the excessive over-consumption by industrialised countries and the rich sections within the developing countries. The relatively recent realisation of the adverse impact on environment of ever increasing consumption has brought the focus on unsustainable patterns of consumption and production.

The environmental stress resulting from unsustainable consumption and production can only be arrested if consumption patterns are changed keeping the requirements of the future in mind. Developing countries obviously do not boast of extravagant life styles or of a vastly unsustainable demand for consumer goods. However, with expanding trade and the growth of communication, patterns of demand even in developing countries are being altered. Consumption patterns, therefore, need to change primarily in affluent countries, for it is only then that more resource optimal pattern of production can be set in motion.

India believes in a lifestyle which blends harmoniously with Nature. What is clear is that there has to be an increased consumer consciousness of the enormous environmental costs of immoderate consumption. The Government of India has been trying to create an awareness for moderation of demand and adoption of a consumption pattern which would not leave a deleterious impact on the environment. This is in conformity with the importance given by Mahatma Gandhi in his thinking on nation and character building.

Though the consumption levels in India are still low, we recognise the pressure on environment in certain urban areas and due to demands for energy. India's per capita income is Rs. 9321.4 per annum. For the majority of the population, consumption levels are very low. Economic growth leading to higher consumption levels is essential for people to lead a better quality of life. The Government of India has embarked on an extensive awareness campaign through print and television media to stress the need for saving scarce water, energy and petroleum resources. New norms for emissions of motor vehicles have been introduced to reduce atmospheric pollution.

- **National targets**

Recycling/reuse has long been an established tradition in Indian society. Deposit and refund practices have been quite widespread in the consumer industry in India. An extensive and effective collection and recycling system for wastes such as glass, tin scrap iron, brass, rubber, paper, plastics thrives in the non-formal sector. Consumers are increasingly aware of health effects of residual pesticides, fertilizers, etc. The textiles, leather and other industries are switching to cleaner technologies.

The ongoing initiatives of Government to improve environment include prèventive as well as promotive measures. Fiscal incentives are provided by the government to encourage the installation of appropriate pollution abatement equipment in the form of customs waive off and soft loans. While the industries are encouraged and the fiscal incentives are provided for installing equipment for control of pollution, punitive measures including legal action is taken against defaulting units.

To achieve the goal of pollution abatement, emission and effluent standards for air, water and noise have been notified. Regular monitoring is carried out and the enforcement efforts have been intensified. At present, a majority of identified units have already installed the requisite pollution control equipment According to the data collected by the Central Pollution Control Board (CPCB) on September 30, 1996, out of 1,551 units belonging to 17 categories of highly polluting industries, 1259 units have facilities to comply with the environmental standards, 112 were closed and, 180 were not having adequate facilities. Show Cause notices under Section 5 of the Environment (Protection) Act 1986 have been issued to all the defaulting units.

Apart from notifications of effluent and emission standards for the major categories of polluting industries, national ambient air quality standards including ambient noise standards have been notified. Industries have been directed to instal necessary pollution control equipment within a stipulated time frame. More stringent norms for vehicular emissions have been notified under the Central Motor Vehicles Rules which have come into effect from April, 1996.

## Status Cont'd

Supply of unleaded petrol in four metropolitan cities of Mumbai, Calcutta, Delhi and Chennai has been introduced with effect from April 1,1995 for use in four wheel vehicles fitted with catalytic converters. The use of unleaded petrol will be gradually extended to other cities in the country.

Twenty-four critically polluted areas in the country have been identified and action plans have been drawn up to improve the quality of environment in these areas. Adoption of Cleaner Production Technologies and formation of Waste Minimisation Circles is being encouraged to minimise environmental pollution. Under the World Bank aided Industrial Pollution Control Project, technical and financial assistance is provided for setting up Common Effluent Treatment Plants (CETPs) in clusters of small scale industrial units. An "Eco-Mark" scheme has been launched to certify various products of the industries which fulfil the prescribed standards of environment-friendly production, packaging and waste disposal. To increase public awareness, campaigns on effects of pollution and measures to control it, have been launched.

The process of development is sharply raising the consumption of household energy. It is imperative that importance is given to developing non-conventional or renewable sources of energy for sustaining the development process. Sun, wind, water and biomass are renewable, perennial, dependable and widely available sources of energy. Generation and utilisation of energy from renewable energy sources in non-polluting and environmentally benign non-conventional sources of energy have tremendous potential .

According to available statistical data, India accumulates every year 300 million tonnes of agro residues out of which only a small quantity is utilised as direct fuel. The potential of bio-mass energy is placed at 17,000 MW and of solar energy at SX10l: KWHr/year. On a conservative assessment, wind power potential in the country is around 20,000 MW and of mini hydro-energy at 5,000 MW. The total wave power potential from ocean energy along India's 1600 km coastline is 40,000 MW The major programmes for new and renewable sources of energy which were developed and enlarged during the Seventh Plan included national projects on bio-gas development, improved Chulhas, solar, thermal energy utilisation, Solar Photo Voltaics (SPV), wind energy and conversion of bio-mass into energy, energy plantation and bio-mass gasifiers.

Patterns of consumption by the very poor, even when unsustainable in the short term, must be regarded primarily as survival consumption. Over use of agricultural land, over-grazing of pasture land, and the depletion of forests for fuel wood are all manifestations of a survival economy. To speak of such consumption as being unsustainable, and hence requiring change, without addressing the human condition that leads to such consumption, is not only unethical but also impractical. There is perhaps a misplaced emphasis on population growth in developing countries as posing the major threat to the future sustainability of the planet. There is at the same time a definite resistance to discussing the question of excessive consumerism in economically advanced societies. If one person in rich countries depletes the earth's energy resources by 20 units, as compared to one unit in South Asia, one could well divide the South Asian population growth by 20 in an assessment of comparative impact. The primary need therefore is to change the patterns of excessive over consumption in the developed societies, so that the limited resources of our planet can be beneficially used by all.

## Cross-Sectoral Issues

1. **Decision-Making Structure:** No information.

2. **Capacity-Building/Technology Issues:** No information.

3. **Major Groups:** No information.

4. **Finance:** No information.

5. **Regional/International Cooperation:** No information.

## STATISTICAL DATA/INDICATORS

| | 1985 | 1990 | 1992 | Latest 199 |
|---|---|---|---|---|
| GDP per capita (current US$) | | | | |
| Real GDP growth (%) | | | | |
| Annual energy consumption per capita (Kg. of oil equivalent per capita) | | | | |
| Motor vehicles in use per 1000 inhabitants | | | | |
| Other data | | | | |

## AGENDA 21 CHAPTER 5: DEMOGRAPHIC DYNAMICS AND SUSTAINABILITY

**NATIONAL PRIORITY:**

**STATUS REPORT:** Population stabilisation is an essential prerequisite for sustainable development. In India, the National Family Planning Programme was launched in 1952 with the objective of "reducing birth rate to the extent necessary to stabilise the population at a level consistent with requirement of national economy". The technological advances and improved quality and coverage of health care resulted in a rapid fall of the mortality rate from 27 in 1951 to 9.8 in 1991. In contrast, the reduction in birth rate has been less steep, declining from 40 in 1951 to 29.5 in 1991. As a result, the annual exponential population growth has been over 2 per cent in the last three decades. During the Eighth Plan period (1992-97), the fall in birth rate has been steeper than that in the death rate; consequently annual growth rate is around 1.9 per cent during 1991-95. The rate of decline in population growth is likely to be accelerated during the Ninth Plan period (1997-2002).

India participated in and is a party to the Programme of Action (POA) of the International Conference on Population and Development (ICPD), held at Cairo in 1994. In keeping with the global vision of population programmes contained in the Programme of Action of ICPD, a paradigm shift has taken place in the National Family Welfare Programme. From April, 1996, the Family Welfare Programme is being implemented on the basis of the "Target Free Approach (TFA)". This approach envisages replacement of the system of setting contraceptive targets from the top by a system of decentralised participatory planning at the Primary Health Centre (PHC) level.

Decentralised participatory planning stresses quality of care and assessment and provision of services on the basis of needs of clients. Voluntary and informed choice which has always been the underpinning of the population programme, is stressed Service providers/managers at the level of the Primary Health Centre are expected to draw up a health care and family welfare plan at their level after carrying out assessment of community needs and in consultation with the community and community leaders. An integrated system of monitoring has been devised and transmission of information will be done using the country-wide governmental information network known as the NIC-NET. While the reporting system is still to be put into place, it is expected that this system of reporting will relieve service providers of excessive record keeping and free their valuable time resource for providing services to and making contact with the community. The mobility of service providers is being enhanced, to facilitate greater and more frequent contact with the community. As much as 132,285 sub-centres at the peripheral level have a female para-medical (known as the Auxiliary Nurse Midwife or ANM) and the medical doctors at Primary Health Centre (PHC) level include a fair number of women, the women s perspective is expected to be taken care of by this empowerment of service providers and managers.

Major public health interventions were undertaken in the year 1995 to 1997. In keeping with the goal of eradication of polio by the year 2000 AD, the first round of Pulse Polio Immunisation (PPI) was carried out for children in the age group 0-3 years in December, 1995 and January, 1996. On the first (9th December, 1995) National Immunisation Day, 87 million children were immunised and in the second (20th January, 1996), 93 million children were immunised against polio. The exercise has been repeated on 7th December, 1996 and the coverage in 490 districts which have reported so far, out of total 510 districts, is 115 million children.

Similarly, a check-up of primary school children was carried out over the period July/October, 1996. Coverage of children enrolled in schools was about 85 per cent. This check-up aimed to detect common health problems among school children, refer those needing treatment, and to build health awareness in the community.

Both these initiatives attracted tremendous community response. Based on the experience of the Pulse Polio Immunisation, the Department of Family Welfare has plans to use the Pulse Polio Immunisation Campaign (PPIC) posts on regular basis for reproductive and child health care including Immunisation. The check up of school children has since been mandated by law to become a regular annual feature, particularly for detection of incipient disabilities. The screening will be followed up by referral and treatment as necessary.

In keeping with the policy shift in the population programme, the IX Plan (19972002) will contain a large project, named the "Reproductive and Child Health Project" (RCH). This will contain two components. The first of this would be a national component in continuation of the ongoing Child Survival and Safe Motherhood' (CSSM) project. The CSSM, which has been extended to cover all districts in the country, aims to provide universal immunisation to children against six vaccine preventable diseases, namely polio, pertussis, tuberculosis, measles, tetanus and diphtheria, as well as Immunisation against tetanus for pregnant women. Other activities are control of diarrhoea - a major cause

## Status Cont'd

of infant and child mortality, control of anaemia in children and women, control of blindness in children and control of acute respiratory infections in children. Under the safe- motherhood component, enhancement of percentage of delivery by trained personnel, training of traditional birth attendants, provision of emergency obstetric care etc. are being provided. The national component of the RCH project will continue to provide all these services.

## Cross-Sectoral Issues

1. **Decision-Making Structure:** In keeping with the move towards integration of social sector services, a coordination mechanism has been established at the Central level, and States have been advised to set up similar mechanisms at State/Union Territories, district and block levels. Training of all service providers at the last level will be integrated from 1st April, 1997 to enable appreciation of the interlinkages between various aspects of development like literacy, poverty alleviation, and environment with population.

2. **Capacity-Building/Technology Issues:** Information Education and Communication (IEC) is carried out through a variety of modes of dissemination including interpersonal communication, electronic and print media, and animation groups, peer groups, population education through schools, colleges, adult literacy campaigns, youth clubs, etc. and events. Required software for the IEC effort is designed and supplied. Efforts are being made to build capacity at State level to design and create software more appropriate to local needs. IEC has been diversified from being contraception oriented to encompassing issues like the status of women, child survival, age at marriage etc. Correspondingly, messages pertaining to fertility are also being carried in the IEC efforts of other Departments like education, rural development etc.

3. **Major Groups:** The number of government assisted NGOs participating in the population programmes during 1995-96 was about 900. During the current year, i.e., 1996-97, about 650 NGOs have been given assistance upto January,1997. This excludes private sector for profit providers (individual doctors and facilities), who also provide a wide range of reproductive and child health services.

4. **Finance:** No information.

5. **Regional/International Cooperation:** It is estimated that in the IX Plan period (1997-2002), external assistance for the population programme will be at a level of about Rs.30 billion. Agencies like UNFPA and UNICEF have and are continuing to provide valuable technical, monetary and material (including UN) and bilateral agencies are providing financial support for the population programme. The PPI initiative has attracted widespread international support. Extensive research has been undertaken in India on the reproductive health of the population. The National Family Health Survey (NFHS), conducted in 199293, covered 89,777 married women in the age group 13-49 years in 88562 households in 24 States and the Union Territory of Delhi. The Survey has yielded a vast amount of data, which is being used for policy and programme purposes.

## STATISTICAL DATA/INDICATORS

| | 1990 | 1993 | Latest 199 |
|---|---|---|---|
| Population (Thousands) mid-year estimates | | | |
| Annual rate of increase (1990-1993) | | | |
| Surface area (Km$^2$) | | | |
| Population density (people/Km$^2$) | | | |
| Other data | | | |

## AGENDA 21 CHAPTER 6: PROTECTING AND PROMOTING HUMAN HEALTH

**NATIONAL PRIORITY:**

**STATUS REPORT:** The strategy of Indian Health Planning is two pronged - first to build up a primary health care infrastructure, and the other for tackling specific diseases. The primary health care infrastructure, consisting of Sub-centres, Primary Health Centres (PHCs) and Community Health Centres, has been built with a population of 30,000 as unit. This mechanism provides for a sustained and continuous outreach of all health and family welfare programmes in the country. The disease specific strategy consists of programmes aimed at prevention and control of specific diseases. These programmes are targeted for specific regions depending upon the circumstances/spread of the disease. Some of the Programmes are:

- National Malaria Eradication Programme
- National Tuberculosis Control Programme
- National AIDS Control Programme
- National Blindness Control Programme

The "Health for all" strategy is being re-oriented towards "Health for Under Privileged". In view of the importance given to medical and health care in the economic reforms, the Central Plan outlay for programmes of the Department of Health has been stepped up.

The National Health Programmes aimed at prevention, control and eradication of communicable and non-communicable diseases have been taken up by the Government for implementation. Efforts have been made to ensure that the ongoing reforms do not lead to any adverse effect on the provision of essential care to meet the health needs of the disadvantaged segments of the population. Some of the measures include allocation of funds under the Social Safety Net Scheme to improve Maternal and Child Health (MCH) infrastructure beginning with 90 poorly performing districts in a phased manner

Under the "Basic Minimum Services", the Government is committed to provide credible primary health care at 5000 population level. In addition to the Centrally Sponsored Schemes, funds will be devolved to States for meeting the requirement under the Basic Minimum Services, including health and family welfare.

The strengthening of rural health infrastructure has been undertaken over the years by the Department of Family Welfare through provision of buildings, equipment drugs and vaccines and training of all levels of Personnel.

To augment the resources for health care, user charges have been introduced with exemption for the poor for medical/diagnostic services in certain hospitals in some of the States. This would also help in providing better quality services, for which demand is increasing with the rise in income, besides facilitating public funding of basic health facilities .

The focus of the Eighth Plan in Health Sector has been to improve access to health care for the underserved and under privileged segments of the population. This is being achieved through:

i) consolidation and operationalisation of the primary, secondary and tertiary health care infrastructure for optimal performance and building up appropriate referral services, with emphasis on primary care.
ii)effective implementation of national programmes for combating major public health problems.

Communicable diseases continue to be a major cause of morbidity and mortality in India. In addition to the existing bacterial, viral and parasitic infections, there are newer additions such as HIV infection, re-emergence of some infections such as kala azar, so that the disease burden due to communicable diseases continue to be very high. There are National Programmes for control of vectors, but performance in many of these has been suboptimal, an important factor being the lack of key personnel such as lab technicians and multipurpose workers. Many of these programmes were initiated at a time when primary health care infrastructure was not fully operational and hence had their own vertical infrastructure. In the Ninth Plan period, a major effort will be initiated for horizontal integration of these programmes at the district and below district levels within the existing framework of primary health care infrastructure.

## Status Cont'd

For AIDS, a National Control Programme has been taken up with blood safety measures and Sexually Transmitted Diseases (STD) control through National AIDS Control Organisation. During the last four years of implementation of the programme, 154 Zonal Blood Testing Centres have been established all over the country to provide HIV testing facilities. 199 blood banks have been modernised during 1995-96. 128 medical officers, 747 blood bank technicians and 37 drug inspectors have been imparted training under the Programme. The "One World, One Hope" theme that was adopted for the World AIDS Day on December 1, 1996 reflects coming together of various groups to prevent the spread of HIV.

Until poor sanitation, contaminated water supply and lack of adequate facilities for solid and liquid waste management both in urban and rural areas are corrected, it may not be possible to completely prevent periodic outbreaks of infectious diseases. Nevertheless, if outbreaks are detected early enough, it will be possible to control the epidemic and reduce the morbidity and fatality rates. The strategy during the Ninth Plan will be to strengthen health surveillance, early alert and rapid response mechanisms at district and below district level. This would necessitate provision of epidemiological expertise and diagnostic laboratory services as an essential component of existing health care system.

Changing lifestyles, longevity and dietary habits have resulted in increased prevalence and earlier age of onset of diabetes, cerebro- and cardio-vascular disease over the last decade and a concomitant rise in disease burden and DALY (disability adjusted life years) due to non-communicable diseases. The overall cancer incidence in the country is low. Even though the two common cancers of the oropharynx and uterine cervix are easy to diagnose and treat, the available data indicate that majority of cases are detected at a late stage when palliative rather than curative treatment remains the only possible therapeutic modality. There is thus a need to improve facilities for early detection of cancers so that effective treatment could be provided.

It is neither possible nor feasible to initiate and support vertical programmes for control of every non-communicable disease. During the Ninth Plan period, integrated noncommunicable disease control programmes will be implemented utilising the experience gained from pilot projects such as diabetes control programme launched during the Eighth Plan.

Urban migration over the last decade has resulted in rapid growth of urban slums. In some cities, the health status of urban slum dwellers is worse than that of rural population. During the 9th Plan period, steps will be initiated to develop a well structured organisation of urban primary health care to ensure basic Health and Family Welfare dwellings. Appropriate referral linkages between primary, secondary and tertiary care facilities in defined geographic area will be established to promote optimal utilisation of all the available facilities. Increasing involvement of the Nagar Palikas in the implementation of health, water supply and sanitation programmes is expected to improve the health status of urban population specially slum dwellers and those living below the poverty line.

## Cross-Sectoral Issues

1. **Decision-Making Structure:** No information.

2. **Capacity-Building/Technology Issues:** There are over 0.65 million of Indian Systems of Medicine (ISM) practitioners in the country. They work in remote rural as well as urban slum areas and could play an important role in enhancing outreach of health care. There is a need to improve pre-service training and provide periodic updating after graduation so that there is improvement in the quality of services and greater participation in meeting health care needs of the population.

It is important to increase the efficiency of the health system as also of all categories of health manpower during the Ninth Plan period. The recommendations contained in the National Education Policy on Health Sciences as approved by the Central Council of Health and Family Welfare in 1993 shall be implemented to ensure growth and development of appropriate mix of Health manpower. Optimal utilisation of the human resources for health will be made through:

- creation of a functional, reliable health management information system and training and deployment of health managers with requisite professional competence
- multi-professional education to promote team work
- skill upgradation of all categories of health personnel, as part of structured continuing education
- increasing accountability of responsiveness to health needs of the people by assigning a rightful role to the Panchayati Raj institutions
- making use of available local and community resources.

3. **Major Groups:** No information.

4. **Finance:** No information.

5. **Regional/International Cooperation:** No information.

## STATISTICAL DATA/INDICATORS

| | 1980 | 1990 | Latest 199 |
|---|---|---|---|
| Life expectancy at birth | | | |
| Male | | | |
| Female | | | |
| Infant mortality (per 1000 live births) | | | |
| Maternal mortality rate (per 100000 live births) | | | |
| Access to safe drinking water (% of population) | | | |
| Access to sanitation services (% of population) | | | |
| Other data | | | |

## AGENDA 21 CHAPTER 7: PROMOTING SUSTAINABLE HUMAN SETTLEMENT DEVELOPMENT

**NATIONAL PRIORITY:**

**STATUS REPORT:** The current state of human settlements in India presents a mixed scenario. There have been significant improvements in the coverage of the population's basic human settlement-related amenities and the quality of the habitats has improved, with longer durability and more use of market-sourced materials in both urban and rural areas, suggestive of higher levels of affordability. At the same time, housing costs are rising, floor area per capita is falling and a growing number of people are being pushed out of the formal housing market. The impact of the situation is reflected in the proliferation of urban slums.

Urban India has 25.7 per cent of the national population, equivalent to 217.6 million, one of the largest urban systems in the world. During the last four decades, annual incremental population has averaged 5-6 million, about three-fourth of which is through natural population growth, and two-fifth through out-migration from rural areas and administrative changes in classification of urban and rural areas. Urban processes have been varied. The conventional routes of large industry, trade and seat of governance are still important but other routes are evident all over the country, typical of processes in developing countries. Urbanisation through development of "mandi" (village marketing outlet) towns, small towns, social and cultural activities, including educational and medical centres of excellence, religious, cultural and historical centres, tourism, and induced growth of new economic activity centres have been some other urban processes that have successfully developed sustainable urban settlements. Urban India has four mega cities (population 5 million plus), 19 metro cities (1 million plus), 3000 large towns (0.1 million plus) and 3,396 small and medium towns (less than 0.1 million). By the turn of the century, India will have some 40 metro cities.

Urbanisation has had a distinct impact on human settlements and people's lifestyle. Construction technology and land constraints have changed the housing typology in urban areas from single-unit plotted development to vertical structures and multi-household complexes. This changing pattern is seen in mega and metro cities as well as in large towns, but is not so evident in small towns and rural areas. There is, however, clear improvement in services and the durability of the dwelling units in these places as well.

In spite of rapid and widespread urbanisation, India still has a large rural population, 629 million, living in 580,706 villages. The average population of an Indian town is 60,297 and that of an Indian village 1,083. The attractiveness of rural development programmes has been a contributory factor for villages with 10,000 plus population preferring to remain in the rural category. These include, in particular, the Integrated Rural Development Programme (IRDP), Rural Labour and Employment Generation Programme (RLEGP), Jawahar Rozgar Yojna (JRY) and Indira Awaas Yojna (IAY), which have improved housing conditions, income opportunities and accelerated economic growth. Rural areas have contributed to the sustainability of urbanisation by providing inputs for urban industry, trade and services, a large market for urban products, a source of competitively priced labour and household savings to the financial system. The strengthening of rural-urban continuum is high on the habitat agenda.

The major concerns of city managers include the widening gap between the needs and supply of urban services, which has had a deteriorating impact on the urban environment, inadequacy of urban planning, urban poverty and degradation. The parallel development of formal and informal housing has produced the multiple-city syndrome in urban India: a city of the poor and a city of the rich, with distinct variations in levels of amenities, types of structures, level of income and quality of life.

Housing has been a citizen-driven activity, with private sector investment contributing 70-80 per cent of total investment in housing during the first 20 years of planning and even higher, around 90 per cent, subsequently. Public housing activity has been largely directed towards the lower segments of the housing market and a wide range of options have been provided, including site and services, core housing and complete units. The Indian housing stock comprises 148 million units in 1991, including 39.3 million units in urban areas and 108.8 million in rural areas. The value of this housing stock is estimated at Rs. 3258 billion. There has been visible improvement in the housing structure and quality and more of market-sourced materials are being used. The major actors in the housing delivery system are state parastatals, cooperative housing societies, the private sector builders and the people themselves.

## Status Cont'd

While housing shortage is modest at around 5 million units in terms of new construction, the problem is serious in terms of upgradation and renewal of existing housing stock.

Development of housing infrastructure and services has not kept in tune with the growth of housing. The problem of upgradation and renewal of basic services like potable water and sanitation is serious. A similar situation of inadequacy is seen for social services, particularly for the poorer segments, slum settlements, women, children and others in the vulnerable groups. The National Plan of Action places special attention to meeting the backlog in housing and infrastructure assets, including upgradation activities.

Land remains the most critical constraint in the development of the housing sector, particularly in the larger cities. Legislative provisions like the urban land ceiling and rental laws and planning codes are among the major constraints and conservative landuse norms have restricted the supply of land into the market. Apart from these constraints, there are substantial vacant land holdings in the possession of government departments, educational institutions, religious and charitable trusts and corporate organisations and bringing them into the land market would help to augment land supply.

While the proportion of people below the poverty line has declined, in terms of numbers, poverty remains a major concern in urban and rural areas. There are also significant disparities in income distribution. Supporting informal economic activities and improving access of the poor to development inputs is a major issue for the national habitat agenda.

A closely-related concern is of the special needs of children in settlement planning and access to basic services, particularly children belonging to the most vulnerable groups identified in several national and international documents in recent years.

As one of the original signatories to the Vancouver Action Plan, 1976, India has introduced approaches in its human settlements programmes that seek to effectively access the people, especially in the vulnerable groups, to adequate and affordable shelter in human settlements that encompass the shelter unit and basic physical, economic and social services, including access to livelihood programmes. India initiated the process through formulation of the National Housing Policy (NHP) and the long term goal of the policy is to reduce houselessness, to improve the housing conditions of the inadequately housed and to provide a minimum level of basic services and amenities to all. The foundation that has been strongly laid down in the last 20 years, would enable the activities to gather momentum and take the directions that are considered necessary to implement the Habitat II (Istanbul, 1996) National Plan for Action.

Major priority issues are identified to form the base for the National Plan of Action. The objective is to create the enabling environment in which actors outside the government system can become more active in the delivery of housing solutions and provision of services, so that the outreach is extended to all segments of the market, especially the vulnerable groups.

The National Plan of Action (NPA), a consensus effort of all the key actors has two critical objectives, namely, enabling people access to adequate and affordable shelter and social infrastructure and services, and developing sustainable settlements in an urbanising world covering both urban and rural areas.

## Status Cont'd

The NPA has, specifically, the following major activities:

- Creation of an enabling environment;
- Development of all types of housing and related services;
- Eradication of poverty and strengthening the activities in the informal sector;
- Accessing women, children and other vulnerable groups to housing and basic services;
- Monitoring and evaluation systems;
- State shelter policies and action plans.

All the key actors are committed to the implementation of the NPA and the Global Plan of Action, to which the NPA is closely linked. The Government of India, in particular, reaffirms to promote and strive to ensure the realisation of the rights set out in the relevant international instruments and documents relating to education, food, shelter, employment, health and information, particularly in order to assist people living in poverty. The Ninth Plan strategy (1997-2002) will be to provide housing for all by the terminal year of the Plan.

The Habitat II goal of adequate shelter for all in sustainable human settlements is an international responsibility. A healthy, safe, more equitable and sustainable human settlement would contribute directly to achieving world peace, harmony, justice and stability. An innovative framework for international cooperation must be developed to ensure timely, appropriate and responsive technical and financial cooperation to meet the needs and priorities of the developing countries views without any conditionalities.

The international community should establish linkages with the informal sector activities and credit mechanisms so that this growing segment of the economy, which is a major component in the countries of the South, gets access to the global pool of resources. In this endeavour, the participatory efforts of the NGOs, CBOs and the community must be developed.

## Cross-Sectoral Issues

1. **Decision-Making Structure:** No information.

2. **Capacity-Building/Technology Issues:** No information.

3. **Major Groups:** Urbanisation has improved the status of women in the Indian society because of accessibility of education, health services, information and better employment opportunities. Deficiencies in terms of access to basic services necessary for congenial habitats particularly for women in low income settlements, is a major concern. Equally important is the need to bring in gender-sensitivity in human settlements planning and development.

4. **Finance:** Financial intermediation in housing has been developed, especially to promote home ownership programme, but the reachout to the lower segments of the market has not been adequate; credit instruments for rental and upgradation programmes have to be developed. The financial intermediation for infrastructure sector is also not adequately developed. Reducing the transaction costs and risks, as well as accessing low-cost funds in the country and abroad are major concerns. Initiatives in these directions will be taken up during the next two decades, including appropriate fiscal and legislative measures to improve the financial environment and bringing new credit instruments for specific activities and groups.

5. **Regional/International Cooperation:** No information.

## STATISTICAL DATA/INDICATORS

| | 1990 | 1995 |
|---|---|---|
| Urban population in % of total population | | |
| Annual rate of growth of urban population (%) | | |
| Largest city population (in % of total population) | | |
| Other data | | |

## AGENDA 21 CHAPTER 8: INTEGRATING ENVIRONMENT AND DEVELOPMENT IN DECISION-MAKING

**(See pages vii and viii at the beginning of the profile)**

**NATIONAL PRIORITY:**

**STATUS REPORT:** India's development objectives as reflected in the planning process have consistently emphasised the promotion of policies and programmes for economic growth and social welfare. The alleviation of poverty and the development of the country's economic and social infrastructure have been emphasised in the country's successive Five Year Plans. Investment resources were targeted to ensure the realisation of these concerns. Environmental issues which have been an integral part of Indian thought and social processes are reflected in the Constitution of the Republic of India adopted in 1950. The Directive Principles of State Policy enunciate principles which, though not enforceable by any Court, are nevertheless fundamental in the governance of the country and it is the duty of the State to apply these principles in legislation. The commitment of the State to protect environment and safeguarding of forests and wildlife is reflected in the inclusion of specific provisions as a part of the Directive Principles of State Policy. Further, the Constitution provides that it shall be the fundamental duty of every citizen to protect and improve the natural environment, including forests, lakes, rivers and wildlife, and to have compassion for living creatures. By a Constitutional amendment in 1976, the subject of forests and Wildlife was brought under the Concurrent List in the Seventh Schedule, thereby enabling Parliament and the Central Government to also legislate on these subjects. The roots of the growing trend towards popular participation in the conservation and natural resource development programmes lie in these Constitutional provisions.

Environmental protection cannot be isolated from the general issues of development and must be viewed as an integral part of development efforts. Accordingly, the concept of sustainable development must include the fostering of economic growth, the meeting of basic domestic needs (including in the fields of health, nutrition, education, housing, etc.), and the eradication of poverty so as to provide to all a life of dignity in a clean, safe and healthy environment. Stress needs to be placed equally on the "development" dimension of the concept of sustainable development as on its "sustainable" aspect. The integration of environmental concepts into policies and programmes concerning economic development should be carried out without introducing a new form of conditionality in aid or development financing.

India is of the view that there is no conflict between environment and development. Various efforts have been made to integrate environmental concerns into the decisionmaking process. Environmental standards and environmental management plans prescribed are important measures taken to protect environment. The same applies to environment audit which is being made mandatory for major industries.

An important element of sustainability pertains to the protection of the environment and preservation of the natural resource base of the nation. Rapidly growing population, urbanisation, changing agricultural, industrial and water resource management, increasing use of pesticides and fossil fuels have all resulted in perceptible deterioration in the quality and sustainability of the environment. It needs to be realised that environmental protection does not only involve a prevention of pollution and of natural resource degradation, but has to be integrated with the overall development process and the well-being of people.

The need to integrate environmental and developmental decision making process has been recognised as contributing to economically efficient, socially equitable and responsible environmental management. More extensive use of analytical tools, such as environmental impact assessment (EIA) and environmental health impact assessment (EHIA) of strategic policies and development programmes which have an adverse effect on environment or on human health, environmental risk assessment (ERA) of industrial units and environmental audit (EA) to increase efficiency in the use of energy and resources and reduce wastes etc. can contribute to policy integration by making decision makers aware of the environmental consequences of their actions.

A very far-reaching notification by the Ministry of Environment and Forests gazetted in 1994 makes it obligatory for almost all developmental activities, small and large, to conduct an environmental impact assessment study which has to be evaluated and assessed by an impact assessment agency (Ministry of Environment and Forests) who may consult a Committee of Experts, if deemed necessary. The assessment shall be completed within a period of 90 days and the decision on the approval conveyed within 30 days after completion of public hearing, wherever required. As per the Notification, no developmental activity can be taken up unless the conditions stipulated under the respective environmental and forestry clearance have been complied with.

## Status Cont'd

Having achieved substantial progress in terms of the software and the hardware the emphasis now on would have to be on enforcement and performance evaluation of assets created. Monitoring mechanism will, therefore, need to be reoriented in the case of major projects and programmes to achieve this objective.

The National Conservation Strategy and Policy Statement on Environment and Development, adopted in June, 1992, provides the basis for the integration and internalisation of environmental considerations in the policies and programmes of different sectors. It also emphasises sustainable lifestyles and the proper management and conservation of resources. The policy statement announced by the Government in 1992 on Abatement of Pollution reiterates the Government's commitment to arrest deterioration of environment. The Statement reflects a shift in focus from problems to implementation of measures with both short-term and long-term considerations. The statement recognises that pollution particularly affects the poor. The complexities are considerable given the number of industries, organisations and government bodies involved. To achieve the objectives, maximum use is made of a mix of instruments including legislation and regulation, fiscal incentives, voluntary agreements, educational programmes and information campaigns.

## Cross-Sectoral Issues

**1. Decision-Making Structure (please also refer to the fact sheet):** The National Environmental Council is the key sustainable development coordination mechanism.

**2. Capacity-Building/Technology Issues:** No information.

**3. Major Groups:** In India, the need for community participation in development activities has been fully appreciated and recognised. It is realised that developmental activities undertaken with the active participation of major groups have a greater chance of success and can also be more cost effective. In the area of education, health, family planning, land improvement, efficient land use, minor irrigation, watershed management, recovery of wastelands, afforestation, animal husbandry, dairy and sericulture, considerable progress has been achieved by creating people's institutions and community participation.

Enabling people to identify their own strengths and weaknesses and equipping them with necessary skills and capabilities is an important step in the empowerment of the people. Voluntary action helps this process. Traditionally, voluntary organisations have played an important role in India. The Government's intention is to create an environment in which the role of major groups is expanded and strengthened.

There are over 10,000 NGOs in India ranging from national agencies to local groups, from research organisations to mass-based field organisations. Many of these are engaged in popularising eco-development, waste management, forest conservation, preservation of genetic diversity and eco-friendly technologies in industry and agriculture. Voluntary agencies have developed a variety of innovative approaches that could help secure the involvement of local communities, particularly the poorer sections, in various developmental activities. Voluntary organisations have largely been responsible for ensuring the better delivery of rural environmental services that include drinking water facilities, sanitation, road development programmes, etc. The costs of providing basic services have consequently been reduced due to the successful mobilisation of local resources at low costs for implementation of development programmes. The Council for Advancement of People's Action and Rural Technology (CAPART) is the agency for financing and assisting voluntary action in the area of rural development.

The adoption of the 72nd and 73rd Constitutional Amendments in 1992 by the Parliament is a landmark event in the lives of Indian women, as they ensure one-third of the total seats for women in all elected offices in local bodies both in rural and urban areas. As a result of this, women have been brought to the centre-stage in the nation's efforts to strengthen democratic institutions at the grassroots levels and to enter into public life through 2,30,000 local bodies all over the country.

The Ministry of Environment and Forests (MEF) has instituted "Paryavaran Vahinis" with effect from 1992-93 with the basic objective of creating environmental awareness through people's participation. In addition, 3,000 eco-clubs have been set up in schools with ministry's assistance.

The Eighth Plan had identified people's initiative and participation as a key element in the process of development. It had also recognised that the role of the Government should be to facilitate the process of involvement of major groups by creating right types of institutional infrastructure.

**4. Finance:** No information.

**5. Regional/International Cooperation:** No information.

## AGENDA 21 CHAPTER 9: PROTECTION OF THE ATMOSPHERE

**NATIONAL PRIORITY:**

**STATUS REPORT:**
**The Montreal Protocol and its Amendments was signed in 1992.**
**The United Nations Framework Convention on Climate Change was signed in 1993.**

**Additional comments relevant to this chapter** India has signed the Framework Convention on Climate Change (FCCC), which enjoins signatory country parties to take precautionary measures to anticipate, prevent and minimize the causes of climate change and mitigate its adverse effects. India will continue to participate in international efforts find a coordinated, equitable and effective set of actions to combat the threat of climate change. India is of the view that countries should share the burden of abatement in a way that fairly reflects their contribution to the problems as well as their capabilities to help solve it. India's past and present contributions to global CO2 emissions are negligible.

India acceded to the Vienna Convention in 1991, and to the Montreal Protocol in 1992. India's efforts at protecting the ozone layer are guided by the need to integrate environmental protection with development while formulating policy and implementing programmes. The objectives of Ozone Depleting Substances (ODS) phase-out need to be achieved with minimum economic dislocation and minimum obsolescence costs. Indigenous production of products and substitutes requires encouragement, and technological choices need to be carefully made. The special requirements of small and medium enterprises will have to be addressed. This may be achieved by a mix of instruments that include information dissemination, fiscal measures, regulations, etc. The implementation of ODS phase-out programmes will however be contingent upon the availability of assistance, including technology, from the Multilateral Fund.

The current gross $CO_2$ (Carbon Dioxide) emissions per capita in India is 0.2 T/yr., which is one-sixth the world average of 1.2 T/yr. At present, coal accounts for about 60 per cent of fossil fuel use in caloric terms, followed by liquid petroleum at 30 per cent and by natural gas at 10 per cent. Steel, Power and Cement industry and the Railways consume 70 per cent of the total domestic production of coal. Studies show that carbon emission in India is being offset by carbon sequestration leading to zero net carbon emission.

Preliminary studies on the impact of a rise in sea level of 1 mm on the Indian coastline indicate that 0.41 per cent of India's coastal area will be inundated. Some studies suggest that as the greenhouse effect gains strength, the cyclones will become more frequent and more destructive making island archipelagos such as Lakshadweep highly vulnerable. The danger of frequent Storms which generally originate in the Bay of Bengal is, however, higher in the Andamans and Nicobar than Lakshadsweep. Also as the sea level rises, the fresh water aquifers of the islands will be subjected to saline intrusion.

Both Government and voluntary organisations are involved in Climate Change Research in India with the former supporting a wide variety of projects in the area of Global Change research. India Meteorological Department (IMD) monitors the climate to detect change, predict climate change, determine the effects of climate change and contribute to global observational efforts. Since 1983, IMD has maintained a meteorological observatory at the Indian permanent station in Antarctica. The Department has actively participated in various international and national observational efforts. A National Climate Centre (NCC) has been established at IMD's research wing in Pune which undertakes climate research, applications, data collection and management, and impact awareness studies. Data collected from the extensive network of observations are archived at the department's National Data Centre in Pune. The Centre holds over 60 million records in its archives. About 2.5 million records are currently being added to the archives.

The problem of $C0_2$ emissions is a major concern in the Indian energy sector where coal accounts for over 60 per cent of total energy resources used in the country. In order to minimize C07 emissions, efforts are on to improve efficiency levels in the generation and utilisation of energy and promote renewable energy technologies and afforestation measures with a view to extend areas that could function as a "carbon sink". Coal India Limited (CIL), a holding company of seven coal producing companies, handles the implementation of sustainable development programmes in the Indian Coal Sector. There is a special focus on ensuring the conservation of coal sources during exploitation and beneficiation, and conserving energy used in the production and transportation of coal.

## Status Cont'd

The Government of India through the Department of Science and Technology (DST) has undertaken several projects to promote technologies that will reduce pollution of the atmosphere. Technologies that use Compressed Natural Gas (CNG) as fuel in internal combustion engines have been developed for generating electricity in remote hilly areas. To help promote the utilisation of waste, the production of fuel pellets from waste has been successfully demonstrated to industrial users in Mumbai. DST supports R&D efforts aimed at promoting environmental conservation that are conducted by several autonomous institutions and service organisations. Considerable research work has been carried out on Climate Modelling, Air Pollution and Studies of Atmospheric Ozone at the Institute of Tropical Meteorology, Pune, which has climate change as one of its major thrust areas.

The total installed capacity of power in India is 80,000 MW with a per capita consumption of about 300 KWHr/year. Thermal and conventional hydro power contributes about 96 per cent of the total installed capacity. India has a total renewable energy potential of about 126,000 MW comprising Wind (20,000 MW), Micro-hydro ( I 0,000 MW), Biomass/Bioenergy (17,000 MW) Ocean Thermal Power (50,000 MW), Tidal Power (9000 MW) and Sea Wave Power (20,000 MW). In addition, India receives a total solar insulation of the equivalent of 5 x 101' KWHr/year. Besides the potential energy that can be derived from these sources, there is a drive to achieve the target of installing 12 million family type biogas plants and 120 million improved cookstoves that will further the cause of energy conservation. Several major renewable energy programmes are being undertaken in these areas across the nation. Over 2.2 million biogas plants and 22 million improved woodstoves have been installed in rural and remote areas of the country resulting in the saving of the equivalent of 21 million tonnes of fuelwood per annum. Moreover, the biogas plants are producing about 30 million tonnes of enriched organic manure per annum.

Power plants of I5-100 MW capacity based on biomass are being set up and bio-fuels used to generate electricity as well as for thermal application. So far over 1500 biomass gasifiers with aggregate capacity equivalent to 16 KW have already been set up. Considering the resources available in the country in terms of agricultural residue, agro-industrial residue and wasteland for energy plantation, the total exploitable energy potential in the country has been estimated at about 17 000 MW.

In order to meet basic lighting requirements in rural areas, about 32,000 solar street lights, 30,000 domestic lights and 37,000 solar lanterns have been made available in rural and semi-urban areas. Solar photovoltaic systems are also being used for a variety of other applications in rural areas. A total of about 1.25 solar photovoltaic systems with a total capacity of 14 MW have been installed under the programme.

The projects are expected to add 202 MW to installed capacity. As sugar is a major industry in India, the potential for power generation through bagasse based cogeneration is estimated at 3500 MW. The programme will set up capacity for the generation of 300 MW based on bagasse within the next three years. Demonstration projects on biomass combustion based power generation units are being carried out at the block level. The projects use locally available biomass including agro-waste for power generation. Several programmes for the recovery of energy from urban, municipal and industrial wastes, and alternate energy for transportation, and tapping of ocean energy have also been initiated.

## Status Cont'd

With a view to mitigate the pollution problem in the cities of India, more stringent norms for vehicular emissions have been notified under the Central Motor Vehicle Rules which have come into effect from April, 1996. Supply of unleaded petrol in four metropolitan cities of Mumbai, Calcutta, Delhi and Chennai has been introduced with effect from April 1995 for use in four wheel vehicles fitted with catalytic convertors. The use of unleaded petrol will be gradually expanded to other cities in the country. To reduce the utilisation of fossil fuel, the Government has launched a programme for alternate modes of surface transportation. The programme demonstrates the use of electrical vehicles in major metro cities with encouraging signs of interest from a number of private companies who would like to manufacture such vehicles. A new programme to replace petroleum by methanol has also been launched by the Government.

## Cross-Sectoral Issues

1. **Decision-Making Structure (please also refer to the fact sheet):** No information.

2. **Capacity-Building/Technology Issues:** See "Status" for this chapter.

3. **Major Groups:** No information.

4. **Finance:** No information.

5. **Regional/International Cooperation:** No information.

| STATISTICAL DATA/INDICATORS | | | | |
|---|---|---|---|---|
| | 1980 | 1990 | Latest 199- | |
| $CO_2$ emissions (eq. million tons) | | | | |
| $SO_2$ " | | | | |
| $NO_2$ " | | | | |
| $CH_4$ " | | | | |
| Consumption of ozone depleting substances (Tons) | | | | |
| Expenditure on air pollution abatement in US$ equivalents (million) | | | | |
| Other data | | | | |

## AGENDA 21 CHAPTER 10: INTEGRATED APPROACH TO THE PLANNING AND MANAGEMENT OF LAND RESOURCES

**NATIONAL PRIORITY:**

**STATUS REPORT:** The National Land Use & Conservation Board (NLCB) is considering the enactment of a composite Land Resources Management Act encompassing various aspects of land use.

National Land Use Policy Outlines have already been prepared which take into account the environmental, social, demographic, economic and legal issues. The policy has been circulated to all concerned for its adoption and implementation. State Governments are responsible for the implementation of policies and the formulation of laws to conserve and manage land resources with encouragement to local communities, panchayats, and districts authorities. State Governments have been directed to enact suitable legislation in this regard.

States have their own legislation such as the land revenue code which apart from dealing with issues of land administration also regulate the use of land resources. With regard to agrarian relationship there are several statutes dealing with tenancy, prescribing ceilings on the holdings of land etc. A major programme for the consolidation of fragmented plots of land has also been taken up as a means for effective and scientific management of land resources, though progress has been uneven in different states.

It has been generally the policy of the State to conserve good agricultural lands and this is reflected in the guidelines regarding acquisition of land under the Land Acquisition Laws. Diversion of agricultural lands to non-agricultural use is also regulated under the land revenue codes. One major effort of the Central Government for effective management of forest resources was to bring the subject under the concurrent list and to enact the Forest (Conservation) Act of 1980. Under this Act, all cases of diversion of forest lands are required to be approved by the Central Government.

The State Land Use Boards were established in the 1970s for ensuring that scarce land resources are put to optimal use. Progress in this matter varies between states. An apex body, the National Land Resources Conservation and Wastelands Development Council, was set up under the Chairmanship of the Prime Minister in 1985-86. It has been recently been decided to change this to a Central Land Use Council. Under this initiative, the National Land Use and Conservation Board and the National Wastelands Development Boards have been established. These two bodies are expected to deliberate on the evolution of effective guidelines for planning and management of land resources including such modifications in existing legislation as may be necessary. The recommendations of these bodies would be discussed with State Governments.

For over a century, the State has been concerned with the effective survey and settlement of land. Detailed village records are maintained which also include the use to which the lands are being put. It is only in a small part of the country that there are no formal reporting systems based on detailed survey and settlements. The Government through several agencies such as the Indian Council of Agricultural Research (ICAR), the National Bureau of Soil Surveys and Land Use Planning, etc. has been attempting to prepare a detailed GIS on land resources. Much of these use satellite imagery for generation of information and preparation of detailed maps.

In order to strengthen the planning and management system, the existing National Land Use & Conservation Board (NLCB) is being restructured. To adopt a strategic framework for sustainable land use planning and integration of both development and environmental goals, the NLCB is engaged in the preparation of zonal perspective plans for conservation, development and management of land resources. In all developmental programmes, planning is done on a watershed basis. Remote sensing techniques are adopted for interpretation and integrated analysis of data on land use and land resources.

## Cross-Sectoral Issues

1. **Decision-Making Structure:** Under India's federal structure, land is a State subject, and there is so far no national legislation. The National Land Use & Conservation Board (NLCB) in the Department of Agriculture and Cooperation functions as the policy planning, coordinating and monitoring agency for issues concerning the health and scientific management of the country's land resources. The Board has been assigned the task of formulation and implementation of National Land Use Policy, Perspective Plan for land resources generating awareness about the conservation of land resources. The State Land Use Boards (SLUB) are set up in each State to implement the policies and guidelines issued by NLCB.

2. **Capacity-Building/Technology Issues:** Awareness raising campaigns to educate and inform people about scientific land use planning and management are conducted by the NLCB and the State Level Boards. Guidelines issued for the National Watershed Development Programme and catchment treatment programme of Soil Conservation, envisage the active involvement of the beneficiaries/communities in planning and project formulation as also in the execution of projects and maintenance of assets.

The Department of Agricultural Research and Education is responsible for research in improved approaches to the use of land resources. The National Bureau of Soil Survey and Land Use Planning, Nagpur and the Central Soil Conservation research and Training Institution, Dehradun conduct training programmes. It is proposed to include the subjects of land use and land resources conservation in schools, technical and vocational and university education.

3. **Major Groups:** No information.

4. **Finance:** No information.

5. **Regional/International Cooperation:** No information.

## AGENDA 21 CHAPTER 11: COMBATING DEFORESTATION

**NATIONAL PRIORITY:**

**STATUS REPORT:** India's policies and programmes in the realm of forestry, particularly the developments during the last fifteen years have been largely in consonance with the Forest Principles adopted during the UNCED. India has actively participated in the deliberations of the Intergovernmental Panel on Forests, established by the Commission on Sustainable Development. The Forest (Conservation) Act of 1980 initiated a process by which India's forests were treated as an environmental and social resource rather than as a revenue or commercial resource. The strictest controls have been placed on diversion of forest land to other uses and in the rare cases when this is permitted for developmental purposes, compensatory afforestation is a prior requirement. Biodiversity conservation has been made an integral part of forest conservation. Various conservation measures have been taken through strengthening of legislation as also through ecodevelopment efforts.

India's National Forest Policy of 1988 formulated four years before the Earth Summit, embodies many of the highlights which have been repeatedly emphasized in the Rio Principles. The Government's commitment to the management of forests through the participatory process is reflected in the active involvement of tribal and village communities, especially women and persons belonging to the weaker sections of society, and voluntary agencies in strengthening the activities of the State Forest Departments in forest protection and regeneration initiatives. Various problems and conflicts arising out of the tribal forest interface are sought to be resolved through administrative measures including the setting up of village-based Forest Protection Committees - an experiment which has met with remarkable success in some parts of the country.

Review of the social forestry programme launched during the 1980s has resulted in a consolidation of its gains and a strengthening of the weaker links. Increasing focus has been given to the conservation of the existing natural forests with emphasis on natural regeneration. The current approach towards afforestation and forest conservation is to integrate activities and expertise of different sectors so that various pressures which are responsible for degradation of forests are adequately addressed.

The assessment of forest cover in first three cycles (1987,1989 and 1991) was based only on visual interpretation of satellite imagery, while the fourth cycle (1993) has been subjected to computerised analysis. As a result, it has become possible to bring under systematic interpretation a substantial area left uninterpreted during the third cycle. The present 1993 assessment (IV cycle) gives the forest cover of the country at 6,40,107 sq.km. It is mentioned that in the third assessment, a total of 19,093 sq km. was uninterpreted but in the present assessment no area has remained uninterpreted. The 1993 assessment of the forest cover includes the actual forest cover to the extent of 700 sq.km. in the uninterpreted area also. Besides, there has been interpretational correction to the extent of 203 sq.km. Thus while comparing the forest cover figures of IV and III assessment, it is revealed that though there has been an overall increase of 925 sq.km. of forest cover in the IV assessment the real increase is only 22 sq.km.

Analysis of the State-wise changes in the forest cover, reveal that owing to the peculiar situation of shifting cultivation, the country can be broadly classified into two regions, namely, the North-Eastern region and the rest of the country. While there has been a decrease of 635 sq.km. of forest cover in the North-Eastern region, there has been an overall increase of 1560 sq km. of forest cover in the rest of the country, thus resulting in a gross increase of 925 sq.km. in the forest cover in the IV cycle. However, if we look at the qualitative forest cover loss, then we find that the dense forest in almost all the major states have gone down. On the whole, the country has achieved a partial success in the protection of forests.

The Wildlife (Protection) Act,1972 and its amendments up to 1991 provide the legal framework for conservation of wildlife in the country. The amendment of 1991 is significant in that it provides protection not only to wild animals and birds but also to plant species and hence addresses forest ecology in its totality.

The Wildlife scenario in the country is not very encouraging. According to the All India Tiger census in 1993, the tiger population has gone down in number. There has been a loss of 553 tigers in between two censuses carried out in 1989 and 1993. In spite of provisions of the Wildlife Act (amended) being very stringent and tough in content, poaching of wildlife still continues. There has been a change in the demand pattern, from tigers' skins to their bones, and full analysis of this is required so as to prevent poaching at the initial stages. Wildlife Conservation has assumed new dimensions under Ecô-Development Scheme in and around national parks and sanctuaries.

## Status Cont'd

A National Afforestation and Eco-Development Board (NAEB) has been created for promoting afforestation, tree planting, ecological restoration and eco-development activities. The NAEB pays special attention to regeneration of degraded forests. The NAEB serves as a vital interface between external agencies and the State Governments. Tree planting is the main focus, particularly through the following two schemes of NAEB: (i) Area Oriented Fuelwood and Fodder Scheme (ii) Integrated Afforestation and Eco-Development Project. Efforts are being made to ensure that weaker sections and women emerge as the major beneficiaries of the activities of NAEB. Till 1994-95, about 237,781 ha degraded forests has been taken up for plantation under Area Oriented Fuelwood and Fodder Project of the NAEB. The monitoring and evaluation of the plantations done so far requires to be taken up so as to assess the survival of the seedlings planted.

Participatory Forest Management as an effective means in regenerating degraded forests has been increasingly gaining ground in India. In 1990, the Government of India issued guidelines to the State Governments highlighting the need and the procedure to be adopted for the involvement of village communities and voluntary agencies in the protection and development of degraded forests. In response to these guidelines, 17 States have so far issued relevant orders/resolutions enabling people's participation in management of degraded forests. The participatory Forest Management approach envisages active participation and involvement of the people in the programme of forest conservation and development in the development of micro-level plans and in their implementation. At present, approximately 2.0 million hectares of forest areas are being maintained through 20,000 Forest Protection Communities. Although many States have taken the initiative in regard to participatory management, operationalisation of the new approach in the field level has taken effective root only in a few States. In the coming years, more emphasis will be given to field level implementation of this new concept.

Introduction of the Eco-Development Programme has been one of the recent developments in the field of wildlife management which aim at economic development of the people residing in and around sanctuaries and national parks, in order to reduce their dependence on forest products so that the ecological health of the protected areas can be developed and sustained. The scheme aims at increasing productivity of land and forest resources in the immediate neighbourhood of the people so that alternative avenues of employment and income are made available.

Eco-Development Programme envisages a package of activities including developing agriculture, improvement of land productivity and minor irrigation, raising of fodder and fuel plantation, livestock care and improvement, introduction of fuel saving devices, medical care including family planning and creation of environmental awareness. It is increasingly felt that the concept of eco-development should not be limited to protected areas alone and that the scope and content of such schemes should be further extended to cover other villages lying in the immediate vicinity of forests. The comprehensive State Forestry Projects which have been launched by a number of States recently incorporate elements of eco-development as a means of ensuring sustained development of forests.

India's economic and trade policies which have a bearing on forest and forest products are being progressively fine-tuned with a view to facilitating conservation and sustainable development and use of forests. This is reflected in liberalisation of imports of forest products to relieve pressures on forests, nationalisation of trade of certain forest products, incentives for wood substitution, subsidies in use of fuel-saving devices and alternative sources for energy supply like biogas and solar energy and financial incentives through supply of seedlings free of cost or on subsidised rates.

## Cross-Sectoral Issues

1. **Decision-Making Structure:** No information.

2. **Capacity-Building/Technology Issues:** No information.

3. **Major Groups:** Considering the symbiotic relationship between tribal people and forests, and in order to ameliorate the socio-economic conditions of the tribals, various issues related to forest-tribal interface were examined and detailed guidelines have been issued by the Government of India to the State Governments in 1991. These guidelines encompass a number of subjects including regularisation of old encroachments of forest lands, review of disputed claims over forest land, elimination of intermediaries to stop exploitation, conservation of forest villages to revenue villages, payment of compensation for loss of life and property due to depredation by wild animals.

One of the important elements in the Participatory Forest Management System related to making use of indigenous capacity and local knowledge regarding various aspects of conservation, development and use of forests. The rural people, particularly women, have an intimate knowledge about various species, growth characteristics, utility and medicinal value. They are also well informed about the species to be planted in a given locality to satisfy the specific requirements of fuel, fodder, timber and other nonwood forest products. In participatory forest management, planning and implementation of most of the activities related to regeneration and protection are done with the active involvement of the rural people and thus, the traditional knowledge base of the people is fully utilised for the benefit of the community.

4. **Finance:** No information.

5. **Regional/International Cooperation:** No information.

## STATISTICAL DATA/INDICATORS

| | 1985 | 1990 | Latest 199- |
|---|---|---|---|
| Forest Area (Km$^2$) | | | |
| Protected forest area | | | |
| Roundwood production (solid volume of roundwood without bark in mill m$^3$) | | | |
| Deforestation rate (Km$^2$/annum) | | | |
| Reforestation rate (Km$^2$/annum) | | | |
| Other data | | | |

## AGENDA 21 CHAPTER 12: MANAGING FRAGILE ECOSYSTEMS: COMBATING DESERTIFICATION AND DROUGHT

**NATIONAL PRIORITY:**

**STATUS REPORT:**

**The International Convention to Combat Desertification in Countries Experiencing Drought and/or Desertification Particularly in Africa was signe in 1996.**

**Additional comments relevant to this chapter** About 10 percent of the 329 million hectares of land area of India is arid. This zone is located in the western region. Rajasthan accounts for 61 per cent and 20 per cent is located in adjoining State of Gujarat. Cold deserts located in the High Himalayas of the North West account for the rest. Semi-arid areas account for 30.56 per cent of the area and are located in 127 districts in 10 States. There is a well defined desert region consisting of the great desert and little desert. The great desert extends from Rann of Kutch beyond Luni river northwards. The little desert is located between Jodhpur and Jaisalmer and the two are divided by a zone of sterile rocky land cut up by limestone ridges.

There is evidence to prove that the arid area had dense forest cover. Large scale migrations through the North Western Himalayan passes resulted in clearance of natural vegetation for settled agriculture. As arid areas are located on routes of migration, the delicate balance of water and nutrient recycling was lost with indiscriminate spread of agriculture which started around three thousand years ago. The river "Saraswati" of Indian mythology vanished altogether while other rivers merged into the sand dunes.

The semi-arid regions abutting the arid zone on the North and North East have a better water regime as a number of perennial rivers fed by Himalayan snow traverse the area. A well knit irrigation system makes the area the most productive part of the country. In the East and South, however, agriculture is mainly rain-fed particularly in the plateau region. Periodic cycles of drought due to failure of monsoon rains is a common feature.

In the National Conservation Strategy particular attention has been paid to tackling such areas. The strategy, inter alia, includes classification, zoning and apportionment of land for designated uses, enactment of laws for appropriate land uses to protect the soil from erosion, pollution and degradation, measures for run off losses and wind erosion, development of suitable agro-silvipastoral techniques, measures for water conservation, recycling and optimal conjunctive use of surface and ground water and encouragement to and improvement in traditional methods of rain water harvesting.

The Desert Development Programme (DDP) was initiated in 1977-78. It covers both the hot desert regions of Gujarat, Rajasthan and Haryana as well as cold desert areas in Jammu and Kashmir and Himachal Pradesh. It is operative in 131 blocks of 21 districts in 5 States covering an area of about 0.362 million sq. kms. and a population of 15 million. The objectives of the programme include controlling, the process of desertification, mitigating the effects of drought in the areas, restoring the ecological balance in the affected areas and raising productivity of land, water, livestock and human resources. At least 75 per cent of the allocation is earmarked for activities which would contribute towards combating the process of desertification. The programme is implemented with 100 per cent central assistance. The Programme Evaluation Organisation of the Planning Commission has been entrusted with the task of evaluating this programme in order to assess its impact on the control of desertification and on improvements in productivity and income's of life of the people living in these areas. From 1990 to 1993, an amount of Rs. 1485 million have been spent under the scheme, developing an area of 90,412 hectares.

The Drought Prone Area Programme (DPAP) was launched in 1973 in arid and semiarid areas with poor natural resource endowments. The objective was to promote more productive dryland agriculture by better soil and moisture conservation, more scientific use of water resources, afforestation, and livestock development through development of fodder and pasture resource and in the long run to restore the ecological balance. The DPAP covers 615 blocks of 91 districts in 13 States. This is a Centrally Sponsored Scheme where the allocations are shared between the Centre and States on a 50:50 basis. Preparation of development plans on watershed basis, participation of people in planning and implementation of the programme, developing effective liaison between research agencies and implementing agencies are some of the priority areas of the programme which is being implemented in the Eighth Plan with renewed thrust. From 1990 to 1993, an amount of Rs. 3066.9 million has been spent under the scheme, developing an area of 571,633 hectares.

### Status Cont'd

The basic objective of the integrated Wastelands Development Project is to enable the start of pilot projects so as to ensure integrated approach to wasteland development by taking up area-specific projects, taking into account land capabilities, site condition and local needs and ultimately aiming to promote optimal land use for both ecological and socio-economic needs. The different types of problem lands for which projects are prepared under the scheme include saline/alkaline lands, arid/sandy areas, ravenous areas and Aravallis. The activities taken up are soil and water conservation, afforestation, silvi-pasture, grazing management, etc.

The main objective of the Afforestation Project for the Aravalli (Rajasthan) is to check desertification and restore ecological status by re-afforestation and also to increase the production of fuelwood, fodder, timber, non-wood forest products, etc. to meet the local needs. The project has started from April 1992 and the project period is 5 years. Rehabilitation of common lands in Aravallis (Haryana) is being implemented in the four southern districts of Haryana, viz, Bhiwani, Mahendragarh, Gurgaon and Faridabad since 1990. The project outlay is Rs.480 million. It aims at environmental protection and restoration of green cover in the semi-arid Aravalli Hills and improvement of the living conditions of the local people in meeting their biomass needs.

In order to integrate the activities aimed at combating desertification and to intensify these activities it has been proposed to formulate a comprehensive plan for control of desertification under the National Forestry Action Programme. The plan envisages evaluation of the present status of deserts in the country, assessment of the implementation of ongoing programmes for development of deserts and desert prone areas, formulation of broad policy guidelines and action plans for implementing programmes aimed at control of desertification, development of strategies involving people in desert control through various means, including adoption of appropriate measures related to research and training in desert control.

## Cross-Sectoral Issues

1. **Decision-Making Structure:** No information.

2. **Capacity-Building/Technology Issues:** Research activities pertaining to various aspects of arid zone are being conducted in the Central Arid Zone Research Institute. Majority of the activities of the institute are oriented towards agriculture and soil conservation. Central Arid Zone Research Institute, (CAZRI) Jodhpur was established in 1988 under the auspices of Indian Council of Forestry Research and Education (ICFRE) with the prime object to carry out research, inter alia, in sand-dune stabilisation, afforestation of arid saline land of Rann of Kutch, Aravalli Hills and Indira Gandhi Nahar Project (IGNP) command area, appropriate land use systems, silviculture of important shrubs and trees with emphasis on selection and tree improvement, vegetative propagation, etc. Some important studies that have been conducted are identification of species most suitable for restricting the movement of sand-dunes and checking the advance of desert, influence of moisture conservation practices in the establishment of plantations in arid and semi-arid areas, investigation of the influence of farm yard manure and nitrogen and potassium fertilisers on establishment and growth of Prosopis cineraria and Tecomella undulata, irrigation management in forestry plantations in IGNP command area of the Indian Desert, and Combined Production System (Agri-silvi-pastoral) in arid regions, etc.

India has built up some degree of expertise in matters that could be considered relevant to desertification. These, inter alia, include long range weather forecasting, remote sensing, research in arid zone agriculture, forestry and pastures, and dry land farming.

3. **Major Groups:** No information.

4. **Finance:** No information.

5. **Regional/International Cooperation:** India has ratified the UN Convention to Combat Desertification in those countries experiencing serious drought and/or desertification, Particularly in Africa. The Convention entered into force on December 26, 1996. India has been taking regular part in the Inter-governmental Negotiating Committee to Combat Desertification (INCD) process. In collaboration with the Interim Secretariat of the United Nations Convention to Combat Desertification, Government of India hosted a Regional Conference on the Implementation of the UN Convention to Combat Desertification and Drought in Asia from August 21-23, 1996 at New Delhi. The countries resolved to initiate consultations among themselves with a view to identifying specific programmes for regional cooperation.

## STATISTICAL DATA/INDICATORS

| | 1980 | 1990 | Latest 199 |
|---|---|---|---|
| Land affected by desertification (Km$^2$) | | | |
| Other data | | | |

## AGENDA 21 CHAPTER 13: MANAGING FRAGILE ECOSYSTEMS: SUSTAINABLE MOUNTAIN DEVELOPMENT

**NATIONAL PRIORITY:**

**STATUS REPORT:** Mountains are important sources of water, energy, minerals, forests and agricultural products and areas of recreation. They are store houses of biological diversity, home to endangered species and an essential part of the global ecosystem. Therefore, the development of the mountains has to be viewed in a holistic manner, encompassing economic development, technological improvement, environmental protection and human resource development. All these activities are interrelated and gains in one will produce benefits in others

As a major ecosystem representing the complex and inter-related ecology of our planet, mountain environments are essential to the survival of the global eco-system. Mountains are, however, vulnerable to human and natural ecological imbalance. The Himalayas represent one of the most fragile mountain eco-systems and, furthermore, sustain a large human population. This sets them apart from the Alpine or other ranges, where the human habitation is not so high. They and their people deserve consideration and attention, so that their local knowledge can be utilised, so that sustained and accelerated development becomes a reality for them while ensuring promotion and protection of the eco-system as a whole. The role of International Centre for Integrated Mountain Development (ICIMOD) located in Kathmandu, in generating and strengthening the knowledge about ecology and sustainable development of mountain eco-systems has been recognised in Agenda 21, which calls on the national governments and international organisations to support it

The Himalaya is vast diverse and youngest mountain system in the world. It occupies 18 per cent of the geographical area of India and regulates climate of the entire Indian sub-continent. Existence of valuable flora, fauna and minerals exclusive to the region is unique. The Himalaya feeds the major river system in the Indian sub-continent.

As a follow up of the decisions contained in Agenda 21, a number of important activities have been augmented and strengthened to promote the priority activities. While a large number of existing institutions in the region have continued their efforts,the Government have set up GB Pant Institute for Himalayan Environment and Development with specific mandate for generating and strengthening knowledge about the ecology and sustainable development of the Indian Himalaya. The Institute is also involved in integrating and collecting traditional knowledge base for sustainable and integrated development of watersheds. Some of the major achievements are as follows:

i) Suitable models for efficient upland farming systems were developed applying soil, water and nutrient conservation techniques in watersheds of Sikkim and Garhwal Himalaya.
ii) Integrated approaches on the management of irrigation systems, keeping in view rural water supply and sanitation, were developed in selected areas of Kumaun.
iii) Sustainable Natural Resource Management models through people's participation are being developed in selected villages of Nanda Devi Biosphere Reserve.
iv) Preliminary studies on Biodiversity assessment were completed in selected Protected Areas of Kumaun and Himachal Himalaya.
v) Environmental awareness programme and Biodiversity Conservation through school children was continued in the district of Pithoragarh of Kumaun Himalaya.
vi) Resource use in Kullu valley has been studied with a view to evolve sustainable practices.
vii) Conventional and in-vitro propagation protocols for selected multipurpose tree species were developed.
viii) Microbial interventions for improved plant species were developed.
ix) Several on-site training programmes on nursery technology, conservation practices and protected cultivation were organised in remote villages with participation of farmers, NGOs.

## Cross-Sectoral Issues

1. **Decision-Making Structure:** No information.
2. **Capacity-Building/Technology Issues:** No information.
3. **Major Groups:** No information.
4. **Finance:** No information.
5. **Regional/International Cooperation:** No information.

## STATISTICAL DATA/INDICATORS

## AGENDA 21 CHAPTER 14: PROMOTING SUSTAINABLE AGRICULTURE AND RURAL DEVELOPMENT

**NATIONAL PRIORITY:**

**STATUS REPORT:** The Agriculture Sector has a vital place in the economic development of the country as it contributes 29.4 per cent of GDP and employs about 64 per cent of the work force. Significant strides have been made in agriculture production towards ensuring food security. Foodgrain production registered an annual growth rate of 3 per cent during 1984-85 to 1994-95. There has been a significant improvement in agriculture productivity which has helped in reducing rural poverty. Though capital formation (1980-81 prices) in agriculture grew at the rate of 6.05 per cent during 1989-90 to 1994-95, its share in the total gross capital formation declined to 10.85 per cent from 18.86 per cent recorded in 1980-81.

Foodgrain production performed well rising from 168.4 million tonnes in 1991 to an expected level of 196.0 million tonnes in the terminal year of the Eighth Plan period (1992-97) . The production of commercial crops like sugarcane (283 million tonnes), oilseeds (22.4 million tonnes), cotton (13.1 million bales) have been of a record level in 1995-96. From organised upland tea and coffee plantations to extensive and often dense coastal strips of coconut trees as also the subterranean tuber and root crops characterise the variegated nature of the horticultural potential in the country. The production of flowers has emerged as a promising area of high growth in recent years, particularly for its potential of export of cut flowers. However, due to lack of technology and poor infrastructural support for handling, packing, processing and preservation, substantial post harvest losses of fruits and vegetables still characterises the horticulture sector. Lack of any significant breakthrough in seed technology is perhaps one of the main reasons for slow growth in foodgrains output during the nineties.

The country's irrigation potential created by the end of 1995-96 was expected to be 89.44 million hectares comprising 33.01 million hectares under major and medium projects and 56.43 million hectares under minor irrigation schemes. The domestic production of fertilizers falls short of requirement. Integrated Pest Management (IPM) in India includes pest monitoring, promotion of biological control of pests, organising demonstrations, training, etc.

Animal husbandry is an important source of self-employment and subsidiary occupation in rural and semi-urban areas and more so for people living in drought prone, hilly, tribal and other poorly developed areas, where crop production in its own may not sustain them fully. Agricultural products exported include foodgrains, tobacco, cashew, groundnuts, beverages, sugar, molasses, horticulture and floriculture products, processed fruits and juices and meat preparations, etc. India's share in the world trade in agricultural commodities is just about one per cent.

Agricultural exports have received special attention from the Government since it is in this area that there is the greatest potential for raising farm incomes, tackling unemployment and earning foreign exchange. A number of policy changes have been introduced to give an impetus to agricultural exports.

In the Eighth Plan, the agriculture sector is expected to register an annual growth rate of 3.5 per cent while foodgrain production is expected to register an annual growth of 3.0 per cent. In the accelerated growth scenario for the Ninth Plan (1997-2002), efforts will need to be made to achieve an agricultural growth rate of 4.5 per cent per annum. Allied sectors such as horticulture including fruit and vegetables, fisheries, livestock and dairy will continue to register acceleration in growth during the Ninth Plan period. In the Ninth Plan, targets will be realised through a regionally differentiated strategy based on agronomic, climatic and environment-friendly conditions. At the macro level, the agriculture development strategy will be differentiated by broad regional characteristics of agro-economic situation.

## Status Cont'd

There is urgent need to reduce dependence on fertilizer imports by improving output and productivity in fertilizer production units through better capacity utilisation and modernisation, wherever necessary. Importance will be given to improvements in energy efficiency in the fertilizer sector with a view to reducing the cost of production of fertilizers. Emphasis will be given to promote a higher seed replacement rate. In the post GATT period, new plant variety protection rights make it necessary to augment facilities for registration of varieties.

The research efforts will be accelerated through biotechnology, micro-biology, genetic improvement of crops including hybrid technology, genetic upgradation of animal harvest technology, etc. In agricultural education, thrust will be on human resource development through upgrading teaching facilities. The existing infrastructure for transfer of technology will be made more effective and responsive to meet farmers needs.

Animal Husbandry and Dairying will receive greater attention for development during the Ninth Plan as this sector plays an important role in generating employment opportunities and supplementing incomes of small marginal farmers and landless labourers, especially in the rainfed and drought-prone areas. Effective control of animal diseases, declaration of disease-free zones, scientific management of genetic stock resources and upgradation, breeding, quality feed and fodder, extension services, enhancement of production, productivity and profitability of livestock enterprise will be given greater attention.

Over the last two decades, there has been a considerable decline in the incidence of rural poverty. However, a large number of persons continue to live below the poverty line. Hence, there is a need for continued direct State intervention for eradication of poverty. While the programmes for self-employment and supplementary wage employment would continue in the Ninth Five Year Plan, these would be redesigned in order to make them more effective as instruments of poverty alleviation. They would also be integrated with the various sectoral programmes as well as the area development programmes within the umbrella of the Panchayati Raj Institutions.

To make self-employment programmes more effective in the Ninth Plan, there will be a shift in strategy under Integrated Rural Development Programme (IRDP), from an individual beneficiary approach to a group and/or cluster approach. This would facilitate higher investment levels to ensure viability of projects. Further, the ingredients of this approach would include development of skills of the poor through an inbuilt training component, upgradation of technology, establishment of forward and backward linkages, availability of appropriate infrastructure and market tie ups.

## Status Cont'd

A new initiative for social mobilisation will be taken up in the Ninth Plan, for creating self-managed institutions of the poor. A mechanism for training of social animators to assist the poor to form their own organisations and articulate their felt needs and aspirations would be taken up.

Rural poverty is largely among the landless and marginal farmers. Therefore, access to land remains a key element of the anti-poverty strategy in rural areas. The programme of action for Land Reforms in the Ninth Plan would include the following:

- detection as well as redistribution of ceiling surplus land
- upgradation of land records on a regular basis
- tenancy reforms providing for recording the rights of tenants and share croppers
- consolidation of holdings
- preventing alienation of tribal lands
- providing access on a group basis to the poor on wastelands and common, property resources.
- leasing-in and leasing-out of land will be permitted within the ceiling limits
- preference to women in the distribution of ceiling surplus land and legal provisions for protecting their rights on land.

Agricultural Development in Ninth Plan (1997-98 to 2002-03)

- Agriculture contributes 29.4 per cent of GDP: employing 64 per cent of the country's workforce. During the Eighth Plan, 1992-97, agriculture registered an annual growth rate of 3.5 per cent, with foodgrain output growth at 3 per cent. In the Ninth Plan the agriculture growth is aimed at 4.5 per cent.
- Targets to be realised through regionally differentiated strategy based on agronomic, climatic and environment-friendly conditions.
- North-western high productivity regions to promote diversifications and high value crops and to strengthen linkages with agro processing industries and exports
- Eastern region with abundant water to exploit the productivity potential through flood control, drainage management, improvement of irrigation facilities and, improved input delivery systems.
- Water scarce peninsular region including Rajasthan, to focus on efficient water harvesting and conservation methods and technologies based on watershed approach and appropriate farming system.
- Ecologically fragile regions including Himalayan and desert areas to concentrate on ecofriendly agriculture.

Seven Basic Services have been identified for priority attention with an all out effort for their complete coverage in a time bound manner. These are safe drinking water, availability of primary health service facilities, universalisation of primary education, provision of public housing assistance to all shelterless poor families, nutritional support to children, connectivity of all villages and habitations by roads and public distribution system targeted to the poor. Policies and programmes relating to these areas would be given a thrust in the Ninth Plan

The Panchayati Raj Institutions will function as effective institutions of local self-government and they would prepare plans for economic development and social justice and implement them. The Panchayati Raj Institutions (PRIs) will be the umbrella for integration of sectoral programmes with poverty alleviation and rural development programmes. Council for Advancement of People's Action and Rural Technology (CAPART) will continue to provide projected financial assistance to voluntary Organisations which will have to play a more dynamic role in empowering the poor through advocacy, awareness generation and formation of Self-Help Groups during the Ninth Plan.

## Cross-Sectoral Issues

1. **Decision-Making Structure:** No information.

2. **Capacity-Building/Technology Issues:** Increased mechanisation in agriculture has created demand for more trained manpower for operation, maintenance and management of agricultural machinery. To provide better quality equipment to the farmers, the Government has set up Farm Machinery Training and Testing Institutes.

The Indian Council of Agricultural Research (ICAR) plays a crucial role in promoting science and technology and its application in agriculture. A national Gene Bank, which is the biggest in Asia, was opened at New Delhi. The gross value of output from livestock sector is estimated to account for 26 per cent of the total value of output from agriculture sector.

3. **Major Groups:** The Training of Rural Youth for Self-Employment (TRYSEM) will be revamped in its design, curriculum and method of training in order to improve the employment opportunities of the poor. It will focus on activities in which the rural youth are already engaged and where there exists a potential for skill upgradation or else on activities which would enhance production under group-cluster approach. The artisans in rural areas, despite their rich heritage and skills, belong to the poverty group. The existing programme aimed at upgrading their skills and improving their production capabilities, by supplying them with modern tool kits, would be strengthened and expanded in the Ninth Plan. This would facilitate enhancing the productivity and income levels of the rural artisans.

Development of Women and Children in Rural Areas (DWCRA), which is based on a group approach, has been successful in empowering women and in improving their economic status, in selected States. A mechanism for replicating the successful DWCRA groups would be evolved. Thrift will be the starting point for the formation of Self Help Group (SHGs). A greater integration of DWCRA with IRDP and TRYSEM will be attempted to provide womens' groups with greater access to financial resources and training.

4. **Finance:** The thrust of agricultural credit policy continues to be on providing timely and adequate credit support to farmers with particular focus on small and marginal farmers and weaker sections. Cooperatives play a significant role in meeting the short term credit requirement of agriculture. In order to provide financial support to farmers in the event of crop failure as a result of natural calamity, and to restore their credit eligibility for the next season, comprehensive crop insurance scheme was introduced in April, 1995. The strategy to increase capital formation in agriculture includes increased plan outlay and increasing the proportion for development of infrastructure, more efficient use of resources to raise productivity and ensuring remunerative prices to farmers to enable them to use own savings for higher investment. In the area of agricultural marketing, the Government's role is limited mainly to protecting the interests of both consumers and producers through farm support policies and promotion of organised marketing of agricultural commodities.

5. **Regional/International Cooperation:** No information.

## STATISTICAL DATA/INDICATORS

| | 1985 | 1990 | Latest 199 |
|---|---|---|---|
| Agricultural land (Km$^2$) | | | |
| Agricultural land as % of total land area | | | |
| Agricultural land per capita | | | |
| | **1989/90** | **1992/93** | **Latest 199** |
| Consumption of fertilizers per Km$^2$ of agricultural land as of 1990 | | | |
| Other data | | | |

**Producion of Foodgrain and Commercial Crop**
**(Million Tonnes)**

| Crop | 1991-92 | 1992-93 | 1993-94 | 1994-95 | 1995-96 Target | 1995-96 Final | 1996-97 Target | 1996-97 Likely |
|---|---|---|---|---|---|---|---|---|
| Rice | 74.7 | 72.9 | 80.3 | 81.8 | 80 | 79.6 | 81 | 79.6 |
| Wheat | 55.7 | 57.2 | 59.8 | 65.8 | 60 | 62.6 | 65 | 64.5 |
| Coarse Cereals | 26 | 36.6 | 30.8 | 29.9 | 36.5 | 29.6 | 32.5 | 33.1 |
| Pulses | 12 | 12.8 | 13.3 | 14 | 15.5 | 13.2 | 15 | 14 |
| **Foodgrains** | 168.4 | 179.5 | 184.3 | 191.5 | 192 | 185 | 193.5 | 191.2 |
| Kharif | 91.6 | 101.5 | 100.4 | 101 | 107.5 | 98.2 | 104 | 103.2 |
| Rabi | 76.8 | 78 | 83.9 | 90.4 | 84.5 | 86.8 | 89.5 | 88 |
| Oilseeds | 18.6 | 20.1 | 21.5 | 21.3 | 22.5 | 22.4 | 23 | 24.1 |
| Sugarcane | 254 | 228 | 229.7 | 275.5 | 255 | 283 | 270 | 273.6 |
| Cotton@ | 9.7 | 11.4 | 10.7 | 11.9 | 13 | 13.1 | 13 | 14.3 |
| Jute & Mesta$ | 10.3 | 8.6 | 8.4 | 9.1 | 9.3 | 8.9 | 9 | 9.2 |
| **(Percentage variation in production over the previous year)** | | | | | | | | |
| Rice | 0.5 | -2.4 | 10.2 | 1.9 | | -2.7 | | 0 |
| Wheat | 1.1 | 2.7 | 4.5 | 10 | | -4.9 | | 3 |
| Coarse Cereals | -20.5 | 40.8 | -15.8 | -2.9 | | -1 | | 11.8 |
| Pulses | -16.1 | 6.7 | 3.9 | 5.3 | | -5.7 | | 6.1 |
| **Foodgrains** | -4.5 | 6.6 | 2.7 | 3.9 | | -3.4 | | 3.3 |
| Kharif | -7.8 | 10.8 | -1.1 | 0.6 | | -2.8 | | 5.1 |
| Rabi | -0.3 | 1.6 | 7.6 | 7.7 | | -3.9 | | 1.3 |
| Oilseeds | 0 | 8.1 | 7 | -0.9 | | 5.2 | | 7.6 |
| Sugarcane | 5.4 | -10.2 | 0.7 | 19.9 | | 2.7 | | -3.3 |
| Cotton@ | -1 | 17.5 | -6.1 | 11.2 | | 10.1 | | 9.2 |
| Jute & Mesta$ | 12 | -16.5 | -2.3 | 8.3 | | -2.2 | | 3.4 |

**@ Million Bales of 170 kg each      $Million Bales of 180 kg each**

## AGENDA 21 CHAPTER 15: CONSERVATION OF BIOLOGICAL DIVERSITY

**NATIONAL PRIORITY:**

**STATUS REPORT:**

**The Convention on Biological Diversity was signed in 1994.**
**The Convention on International Trade in Endangered Species of Wild Fauna and Flora was signed in 1976.**

**Additional comments relevant to this chapter** India is one of the 12 mega biodiversity centres in the world, representing two of the major realms and three basic biomes of the world. The country is divided into 10 biogeographic regions:
Trans-Himalayan, Himalayan, Indian Desert, Semi-Arid, Western Ghats, Deccan Peninsula, Gangetic Plains, North-East India, Islands and Coasts.

The diversity of the Country's biological resources is yet to be fully surveyed. Approximately 65 per cent of the total geographical area has been surveyed so far. Based on this, over 47,000 species of plants and 81,000 species of animals have been recorded. This list is being constantly upgraded, specially in respect of lower plants and invertebrate animals.

Conservation and sustainable use of biological resources based on the local knowledge systems and practices is ingrained in Indian ethos and way of life. Formal policies and programmes for conservation and sustainable utilisation of biodiversity resources date back to several decades. The concept of environmental protection is enshrined in the Indian Constitution in Article 48(a) and 51(g). Major central acts relevant to biodiversity are:

- Wildlife (Protection) Act, 1972
- Forest (Conservation) Act, 1980
- Environment (Protection) Act, 1986.

The various central acts are supported by a number of state laws and statutes concerning forests and other natural resources.

Policies and strategies directly relevant to biodiversity include:

- National Forest Policy as amended in 1988
- National Conservation Strategy and Policy Statement for Environment and Sustainable Development
- National Agricultural Policy
- National Land Use Policy
- National Fisheries Policy (under preparation)
- National Biodiversity Policy (under preparation)
- National Wildlife Action Plan
- Environmental Action Plan

Surveys of the floral and faunal resources in the country are carried out by the Botanical Survey of India established in 1890 and the Zoological Survey of India established in 1916. The National Institute of Oceanography and several other specialised institutions and universities further strengthen the taxonomic data base.

Approximately 5.3 per cent of the total geographical area of country has been earmarked for extensive in situ conservation of habitats and eco-systems through protection area network of 80 National Parks and 44 per cent Wildlife Sanctuaries. The results of this network have been significant in restoring viable populations of large mammals such as tiger, lion, rhinoceros, crocodiles, elephants, etc.

A programme captioned "eco-development" through World Bank's assistance for in situ conservation of biological diversity involving local communities has been initiated in recent years. The concept of eco-development integrates the ecological and economic parameters for sustained conservation of eco-systems by involving the local communities with the maintenance of earmarked regions surrounding protected areas.

To conserve the representative eco-systems, a Biosphere Reserve programme is being implemented. Eight biodiversity rich areas of the country have been designated as Biosphere Reserves applying the UNESCO MAB criteria.

Programmes have also been launched for scientific management and wise use of fragile ecosystems. Specific programmes for management and conservation of wetlands, mangroves, and coral reef systems are also being implemented. National and state level committees oversee and guide these programmes to ensure strong policy and strategic support.

## Status Cont'd

Attention has been paid to ex situ conservation measures also as they complement the in situ conservation and are even otherwise important. According to currently available survey, Central Government and State Governments together run and manage 33 Botanical Gardens. Universities have their own Botanical Gardens. There are 275 centres of ex situ wildlife preservation in the form of zoos, deer parks, safari parks, aquaria, etc. The Government of India has set up a Central Zoo Authority for overseeing, monitoring, coordinating the management and the development of zoos in the country.

Pursuant to the ratification of the Convention by India in February,1994, several steps have been initiated to meet the commitments under the Convention as also to bring the legislative, administrative and policy regime regarding biological diversity in tune with the Articles of the Convention.

A National Action Plan on Biological Diversity is under finalisation. While consolidating the ongoing efforts of conservation and sustainable use of biological diversity, the draft Action Plan aims at establishing a policy and programme regime which brings the National Action on various aspects of the subject including capacity building and biosafety measures in tune with the Articles of the Convention.

In addition, the following activities are being undertaken:

- Biosafety protocol
- Biodiversity information network
- Capacity building in taxonomy
- Consultations with the State Governments
- Traditional knowledge and benefit sharing
- Legislation

India believes that national action regarding conservation and sustainable use of biodiversity and equitable sharing of benefits arising out of the utilisation of genetic resources demands appropriate actions on the part of international community. Some key issues in this regard are as follows:

i) Development of suitable enabling environment by the other parties, particularly the developed country parties, to ensure benefits to countries of origin. These benefits should not only include measures like royalty payment or monetary compensation, but also location of research and technologies in the countries of origin in accordance with the provisions of the Convention.

ii) Development of an internationally recognised regime for recognising the property rights - both intellectual and physical of the local communities. Development of such a regime may take time. Pending which all patent applications should be required to disclose: (a) the source and origin of the genetic material used; (b) knowledge and practices about the use of the said genetic resources by the local communities and identification of such communities; and (c) give a declaration that laws, practices on guidelines for the use of such material and knowledge systems in the country of origin have been followed.

iii) Capacities of biodiversity rich countries should be built to enable them to do bio-prospecting and products develop from genetic resources.

iv) Introduction of transgenics, alien species should be only with requisite safeguards.

## Cross-Sectoral Issues

1. **Decision-Making Structure:** No information.

2. **Capacity-Building/Technology Issues:** Collection and preservation of genetic resources is done through the National Bureau of Plant Genetic Resources for Wildlife relatives of crop plants; the National Bureau of Animal Genetic resources for domesticated animals; and the National Bureau of Fish Genetic Resources for economically valuable fish species. These Bureaus are assigned the task of collecting germplasm and also supplying these on request to Indian and foreign agencies for research purposes.

A comprehensive status report on biological diversity in India is also under preparation. The Status Report would cover the various facets of biodiversity conservation.

3. **Major Groups:** No information.

4. **Finance:** No information.

5. **Regional/International Cooperation:** No information.

## STATISTICAL DATA/INDICATORS

| | | |
|---|---|---|
| | 1992 | Latest 199 |
| Protected area as % of total land area | | |
| | 1990 | Latest 199 |
| Number of threatened species | | |
| Other data | | |

## AGENDA 21 CHAPTER 16: ENVIRONMENTALLY SOUND MANAGEMENT OF BIOTECHNOLOGY

**NATIONAL PRIORITY:**

**STATUS REPORT:** The Department of Biotechnology has constituted 16 Task Forces for generation of R&D projects for the development of biotechnologies/techniques/ processes, for the perfection of techniques/technologies developed, their field evaluation and transfer to the industries for commercialisation so as to benefit the country in general and the affected population in particular. These Task Forces are as follows:

- Aquaculture and marine biotechnology
- Animal biotechnology
- Biological control of plant pests, diseases and weeds
- Biotech process engineering and industrial biotechnology
- Basic research in biotechnology
- Biotechnology based programme for SC/ST population and weaker sections
- Biofertilizer
- Crop biotechnology and plant molecular biology
- Environment and conservation biotechnology
- Food biotechnology
- Human genetics
- Medical biotechnology
- Microbial biotechnology
- Medicinal and aromatic plants biotechnology
- Plant tissue culture
- Sericulture biotechnology

These Task Forces comprise experts in the respective areas from different parts of the country. All the Task Forces have identified the need based thrust areas in the Indian context. Based on the recommendations of the Task Forces, the Department has supported research in the following areas:

i) Development of stress resistant plant species (crop species, forest trees and medicinally important plant species) for higher yields with less inputs.

ii) Transgenic crop plants for higher yields, pest management, reduction in toxin contents in some crop varieties, etc.

iii) Development of biological pesticides using biotechnological tools so as to bring down the pollution load of chemical pesticides.

iv) Development of more efficient biofertilizers which will be economical to the farmers as compared to the chemical fertilizers, and ultimately bring down pollution load of chemical fertilizers.

v) Development of new immunodiagnostic tools for detection of communicable diseases and certain physiological states, such as early detection of pregnancy, etc.

vi) Development of new/recombinant vaccines for the control of different diseases.

vii) Development of new strains for improved production of antibiotics using/ strengthening the existing infrastructure.

viii) Development of highly efficient strains for treatment of waste waters (domestic as well as industrial) and conversion of wastes and agro-residues into useful chemicals for industrial applications.

ix) Development of ELISA, PCR techniques and DNA probes for the detection of enteric pathogens in drinking water so as to avoid epidemic outbreaks by quick corrective measures to be taken immediately after identification of enteric pathogens.

x) Development of cleaner technologies using the biotechnological tools.

xi) Development of biosensors for detection of Xenobiotics in the environment.

xii) Conservation of endangered/threatened plant species which are at the verge of extinction and are of economically/medicinally importance using biotechnological tools, specifically for the development of protocols for ex situ conservation, which would be taken up by the Ministry of Environment and Forests for in situ conservation.

### Status Cont'd

xiii) Establishment of gene banks in different parts of the country. The purpose of the gene bank is for the preparation of inventory of important species, preservation of genetic resources and to optimise their uses. There is also a provision for networking of gene banks on a regional or inter-regional basis. Under this programme, three banks have been established at (1) NBPGR, IARI, New Delhi, (2) CIMAP, Lucknow and (3) TBGRI, Thiruvanathapuram .

xiv) Development of high-yielding technology packages for aquaculture including feed development, breeding and seed production and bioactive compound, health, development of spawning agents, etc.

xv) Development of embryo transfer techniques, animal feed for high milching cattle and for development of vaccines and diagnostics for different diseases in the area of animal biotechnology.

In collaboration with the Ministry of Environment and Forests, the Department has taken the lead responsibility for the following three activities, in the context of the Convention on Biological Diversity:

i) Development of modalities for access to and transfer of technology to identify the institutions and develop measures for receiving such technologies and utilising them.

ii) Development of modalities for priority access to biotechnology results and benefits on mutually agreed terms.

iii) Formulation of procedures for advance informed agreements on safe transfer of GMOs beyond national jurisdiction.

The Recombinant DNA (rDNA) technology heralded new opportunities for beneficial applications in agriculture, animal and human health, industry and environment. It has also given rise to the concern about possible unknown hazards from bridging the natural species barriers and the uncertain effects of new organisms on environmental and public health. In order to have the effective and safe release programmes, it is necessary to have biosafety and regulatory arrangements in biotechnology. Realising the immediate needs of these arrangements, the Department of Biotechnology has prepared the Recombinant DNA Safety Guidelines and Regulations. These guidelines cover the areas of research involving:

i) GMOs/LMOs,

ii) Genetic transformation of plants and animals,

iii) RDNA technology in vaccine and bioactive molecule development, and

iv) large scale production and deliberate/accidental release of organisms, plants, animals and products derived from RDNA technologies.

## Cross-Sectoral Issues

1. **Decision-Making Structure:** No information.

2. **Capacity-Building/Technology Issues:** No information.

3. **Major Groups:** No information.

4. **Finance:** No information.

5. **Regional/International Cooperation:** No information.

## STATISTICAL DATA/INDICATORS

AGENDA 21 CHAPTER 17: **PROTECTION OF THE OCEANS, ALL KINDS OF SEAS, INCLUDING ENCLOSED AND SEMI-ENCLOSED SEAS, AND COASTAL AREAS AND THE PROTECTION, RATIONAL USE AND DEVELOPMENT OF THEIR LIVING RESOURCES**

**NATIONAL PRIORITY:**

**STATUS REPORT:**

**The UN Convention on the Law of the Sea was signed in 1995.**

See also the attached tables on the next pages.

India's coastline including major indentations and the shores of islands is about 7,500 km. long. About 55 per cent has beaches, which include spits, barriers and sandy stretches. The rest are constituted by rocky, overhanging cliffs and prograding shore including deltas. The Indian coastline is relatively stable with certain marked progradation near river mouths. These are two groups of islands, the Arabian Sea Islands (Lakshadweep and Minicoy) and the Bay of Bengal Islands (Andaman & Nicobar) which differ significantly in origin and physical characteristics.

The maritime zones of the country are demarcated under the Maritime Zones Act 1976 as 12 nautical miles of territorial seas, 24 nautical miles of contiguous zone and 200 nautical miles of Exclusive Economic Zone. Nine States and two Union Territories are located along the Indian coastline and the EEZ of 2.02 million sq. km. is adjacent to these States and Union Territories. India's population as per the census conducted in 1991 stood at 846 million. The nine coastal States and two Union Territories and the islands account for 419 million which is 49.5 per cent of the population of the country. However, not all the districts of the coastal States are situated on the coast. The population of coastal areas is 154 million which is 18.2 per cent of the total population of the country.

The Developmental activities in the coastal zone, coupled with the population increase in the narrow stretch of land, have ultimately posed enormous stress on the coastal marine environment, thus affecting the ecological balance of the coastal zone. A number of eco-systems like mangroves (estimated area 681,676 hectares), coral reefs and marine sanctuaries are situated along the coastal areas. The major mangrove areas are Sundarbans, Andaman & Nicobar Islands, Coringa, and Mahanadi. The coral reefs are present in Gulf of Mannar, Gulf of Kutch, Andaman & Nicobar Islands and Lakshadweep Islands.

The thickly polluted towns and cities like Mumbai, Chennai, Visakhapatnam are situated along the coastline. The domestic waste generated from these cities and towns are disposed as untreated either directly into the sea or through rivers, creeks, etc. It is estimated that nearly 19,000 million litres of sewage per day reach the coastal environment of the country. Attempts are being made to install waste treatment plants in Mumbai, Chennai and Visakhapatnam. Assistance from the World bank has already been obtained for treatment as well as disposal of waste generated from Mumbai.

Major industrial cities like Mumbai, Surat, Cochin, Chennai, Visakhapatnam are situated along the coastline of the country. It is estimated that the total quantity of waste discharged by these cities is approximately 0-7 x 109 cubic metre. There are 1,551 industries located along the coastline of the country and all the major industries treat their effluents before disposal. There are innumerable number of small and medium scale industries which dispose the untreated waste into the creeks as well as sewerage. Efforts have been made to set up common treatment plants at Mumbai, Surat and Chennai to facilitate treatment of wastes before they are disposed. Several tanneries located in Calcutta and near Chennai have been strongly recommended for closure in case these industries do not install treatment plants within the stipulated period specified by the Apex Court of the country.

Nearly,100,000 hectare of land is being used for prawn culture in the States of Andhra Pradesh, Tamil Nadu, West Bengal and Orissa. Sizeable area of coastal land, particularly, within the reach of high tide and also mangrove areas are being occupied by the aquaculture farms. Standards are available for regulating the waste discharged from the aquaculture farms and they are applicable only to large farms.

The western EEZ of India and also Andaman & Nicobar waters are being used as international tanker routes. It has been estimated that nearly 3500 tankers ply this area carrying about 470 million tonnes oil per year. A National Contingency Plan to deal with oil spill disasters has also been prepared. Infrastructure to deal with the oil spills are also

## Status Cont'd

being augmented. India has ratified Marpol 73/78 and adopted the provisions in Merchant Shipping Act.
India ratified the UN Convention on the Law of the Sea in June 1996. The Government of India have rules and regulations for dealing with various activities in the coastal zone which covers the inter-tidal area and the land area of 500 metres from the high tide line. A coastal zone management plan indicating various zones have been prepared by the States of the country so that the rules and regulation as defined in the relevant notification can be dealt appropriately at these zones. The government also has proposed to extend these rules to the ocean part.

The annual potential yield of the marine fishery resources in the Indian EEZ has been estimated to be 3.92 million tonnes. About 65 per cent of the total potential available is being tapped, with hardly 35 per cent left for exploitation. While the 0.50m depth is almost fully exploited, the resource available beyond 50m depth still offers scope for expansion of the level of exploitation by introducing a judicious mix of small and large/commercial resource specific fishing vessels. Almost 98 per cent of this production is contributed by the traditional and mechanised sectors and the remaining 2 per cent by the deep sea fishing sector.

Some of the marine fin fishes threatened by indiscriminate fishing pressure are the whale sharks (Rhiniodon typus), marine catfishes of the genera Tachysurus and Osteogeneosus, the white fish Lactarius lactarius, the flat head Platycephalus maculipinna, the threadfins Polynemus indicus (Dara) and P. heptadactylus, and Sciaenids Pseudosciaena diacanthus (Ghol) and Otolithoides brunneus (Koth), the perch Pomadasys hasta and the eel Muraenosox. The marine catfishes like T. tenuispinis, T. dussumieri and T. serratus form large shoals during breeding season extending from September to March, during which period the incubating/breeding stocks are exploited en masse by purse seiners from the shallow grounds of Karnataka and Goa regions. In the total catfish landings during their breeding period more than 50 per cent of the catch was composed of gestating males, each one carrying 40-150 eggs/embryos in its mouth. This has resulted in the overfishing for a number of years from 1979-1986 which had far reaching effects at other centres since the stock is migratory in nature.

The all Indian production of catfish thus declined from 64,000 t (1988) to 36,000 t in 1992. The indiscriminate catch of berried females of deep sea lobster Puerulus sewelli from selected breeding pockets by a large number of deep sea trawlers has resulted in the over-exploitation and consequential depletion in its landings. The sand lobster, Thenus orientalis and the rock lobster, Panulirus sp. also declined in production and these area-specific resources need conservation and protection. The Horse shoe crab (Limulus sp.,) is a threatened species distributed along Orissa coast. It is widely exploited for different pharmaceutical use.

Keeping in view the need for sustainability in fisheries development and environment protection considerations, India's approach to coastal fisheries has been oriented towards mitigating the adverse effects of such activities on the environment as well as the users. Steps towards achieving sustainable development, inter alia, include enforcement of regulatory measures to control fishing activities in the inland and marine water areas, implementation of Coastal Regulation Zone (CRZ), enforcement of Marine Fishing Regulation Act (MFRA), and strengthening infrastructure for monitoring marine pollution, etc.

The Andaman & Nicobar Islands have an unique tropical eco-system, with an expected diversity and wild germ plasm as also natural beauty. The biotic conditions and the climate of the Islands are essentially congenial for high productivity. The rich mangrove eco-systems, the extremely productive coral reefs and the hitherto the region, has allowed the develop d this unique eco-system. Apart from the deep sea fisheries resources, the shallow water area and

## Status Cont'd

the creeks fringing the Islands offer great potential for the development of coastal aquaculture Lakshadweep is an archipelago consisting of 12 atolls, 3 reefs and 5 submerged banks of its 36 islands, covering an area of 32 sq. km. only 10 are inhabited. The Islands lie between 8 degree and 13 degree North Latitude and 71 degree and 74 degree East longitude. Population of these islands is 51,000. Though the land area is extremely small, if the lagoon area of about 4,200 sq. km. of territorial waters and about 0.4 million sq. km. of the exclusive economic zone are considered, Lakshadweep is one of the largest territories of the nation. The annual exploitable resources of Tuna in the Lakshadweep Sea are estimated at 100,00 tonnes and of shark, 1000,000 tones; the present operations are minuscule compared to the potential.

The Government has initiated following steps, inter alia, for sustainable development of both the island groups:

- Setting up of Andaman & Nicobar Integrated Development Corporation to undertake developmental activities in an integrated manner in order to ensure the sustainability of all economic activities and to avoid conflicts
- Under the Environment Protection Act, 1986, rules have been prescribed to prohibit environmentally destructive activities including mining of corals in the coral reef areas and several developmental along the coastlines of the islands have been regulated
- An apex body namely, the Island Development Authority has been functioning under the Chairmanship of Prime Minister of India to ensure performance of various developmental activities within the framework of sustainable development
- Research and Development activities are being promoted to develop eco-friendly technologies like cage culture with indigenous species for islands
- Promotion of Research for culture of bait fish in Lakshadweep to sustain the tuna fishery.

## Cross-Sectoral Issues

1. **Decision-Making Structure:** No information.

2. **Capacity-Building/Technology Issues:** It is proposed to adopt the concept of Integrated Coastal and Marine Area management ICMAM) to deal with several coastal and marine related issues. A new programme of ICMAM is proposed to be launched from 1997 onwards. Development of a few Model ICMAM Plans and capacity building exercises are also proposed to be carried out. The Wild Life (Protection) Act,1972 is being enforced to protect the endangered species. A programme on Coastal Ocean Monitoring and Prediction System is engaged in the Systematic monitoring of marine pollution in the country. Studies relating to waste assimilation capacity of coastal waters are also proposed to be undertaken from 1997-98 onwards.

3. **Major Groups:** No information.

4. **Finance:** No information.

5. **Regional/International Cooperation:** No information.

## STATISTICAL DATA/INDICATORS

| | 1980 | 1990 | Latest 199- |
|---|---|---|---|
| Catches of marine species (metric tons) | | | |
| Population in coastal areas | | | |
| Population served by waste water treatment (% of country's total population) | | | |
| Discharges of oil into coastal waters (metric tons) | | | |
| Releases of phosphate into coastal waters (metric tons) | | | |
| Releases of nitrate into coastal waters (metric tons) | | | |
| Other data | | | |

## AGENDA 21 CHAPTER 18: PROTECTION OF THE QUALITY AND SUPPLY OF FRESHWATER RESOURCES: APPLICATION OF INTEGRATED APPROACHES TO THE DEVELOPMENT, MANAGEMENT AND USE OF WATER RESOURCES

**NATIONAL PRIORITY:**

**STATUS REPORT:** India's National Water Policy was adopted in September, 1987. The National Water Resources Council (NWRC) under the Chairmanship of the Prime Minister lays down the National Water Policy, reviews development plans and advises on implementation. The Policy aims at planning, developing and conserving the scarce and precious water resources on an integrated and environmentally sound basis keeping in view the needs of the State Governments. The policy envisages strategies, inter alia, ground water development, water allocation priorities, drinking water, irrigation, water quality, water zoning, conservation of water, flood control and management. The State Governments in India make their water policies within the overall framework of the National Water Policy.

High investments made over the successive Five Year Plans have resulted in significant achievements in this sector. While about 82 per cent of the population has access to safe drinking water supply facility in rural areas, the accessibility in urban areas is around 85 per cent. However, the access in most of the cities and towns is still inadequate, particularly in slums inhabited by the poorer sections of the society.

Five Year Plans and Annual Plans contain the strategy for organised and systematic development. Important strategies in the current 8th Five Year Plan (1992-97) are similar to the programme areas of Chapter 18 of Agenda 21. Many of the strategies to be adopted in the Plans are based on the strategies spelt out in the National Water Policy.

There are a number of important ongoing national programmes and projects with domestic and external assistance in the direction of the implementation of recommendations of Agenda 21. Some of these are:

i) Guidelines for sustainable water resources development and management have been formulated. A hydrology project with World Bank assistance is under implementation for systematic collection and analysis of data.
ii) Master Plans for river basins for optimisation and inter-basin transfers are under preparation.
iii) Flood and drought management, environmental and social impact assessment are integral part of project formulation, implementation and monitoring in the country in various States and are continuous processes of all plans.
iv) Documents on non-structural aspects of flood management in India have been prepared. A draft bill on flood plan zone has been prepared. A National Flood Atlas is under preparation
v) Human resources development is being implemented through water and land management institutes and other organisations and agencies. As part of mass awareness programme Water Resources Day is being observed every year
vi) Research and development programmes in the water resources sector are being undertaken through Indian National Committees by universities, research institutes and other organisations on different subjects.
vii) Pilot projects on recycling and reuse of waste water and artificial recharge of ground water are under implementation.
viii) Guidelines on the conjunctive use of surface water and ground waters have been prepared and are under implementation.
ix) Command Area Development Programmes are in progress since 1974.
x) Participatory Irrigation Management (PIM) through Water Users' Associations and women's participation is being actively encouraged and implemented.
xi) A network of hydrological stations, hydrometric observation stations and ground water measurement stations collect data including water quality data through organisations under Central and State Governments on a continuous basis.
Standardisation of involved process is being carried out continuously through the Bureau of Indian Standards and also by participation in the of the International Standards Organisation. Water resources data are collected and transmitted through the network of National Informatics Centre.

Generally, the projects in the water resources sector are being implemented under the categories of major, medium and minor (surface water and also ground water) projects and schemes, flood control projects and Command Area Development Programmes.

## Status Cont'd

India participates in many of the regional programmes sponsored by ESCAP, particularly, on the flood control and reservoir sedimentation studies/schemes. The country also imparts training in water resources development to the candidates nominated by various developing countries and also participates in the training programmes of its own persons in other countries.

Even though important ongoing national programmes are in progress in various stages, quite a few constraints are being faced in the implementation. Some of these are:

i) Deficiencies in systematic data collection and establishment of a good data base - Periodic review and implementation of hydrology project may improve the situation;
ii) Suitable blend of structural and non-structural flood management measures - Proper implementation is needed.
iii) Increase in water pollution - Effective control of improvement in water quality is required to be implemented urgently.
iv) Degradation of fish habitat due to increased water abstraction, land development and pollution;
v) Soil erosion, mismanagement and other over-exploitation of natural resources - Improvement and expediting catchment area treatment and compensatory afforestation is necessary;
vi) Constraint of funds - This is seen as the greatest obstacle in the implementation of Agenda 21 and needs global consideration and assistance;
vii) Lack of adequate training - Greater human resources development in all areas of concern is necessary.

While all the projects and schemes are being implemented in India with the objective of sustainable development, presently, a number of policies/guidelines are under finalisation through national Water Resources Council. These are:

i) Water Information Bill ii) Policy Note on setting up of river basin Organisation.
iii) National Policy for Resettlement and Rehabilitation of persons affected by reservoir projects.
iv) Modification of water allocation priorities specified by National Water Policy.
v) Overall Policy guidelines for water management and pricing of water for industrial purposes.
vi) An approach to organisational and procedural changes in irrigation sec-or. vii) Irrigation management policy.
viii) National policy guidelines for water allocation for inter-State rivers amongst States, and,
ix) Guidelines for planning conjunctive use of surface and ground water in irrigation projects.

As mentioned earlier, a few policies/guidelines are under finalisation through the NWRC. After their adoption, the provisions of which are already under implementation in different stages will be monitored for ensuring sustainable development. Other items of sub-policies which are not covered above, will also be framed by the national Water Board for adoption by the NWRC in the near future.

## Cross-Sectoral Issues

1. **Decision-Making Structure:** The National Water Resources Council (NWRC) under the Chairmanship of the Prime Minister lays down the National Water Policy, reviews development plans and advises on implementation.

2. **Capacity-Building/Technology Issues:** No information.

3. **Major Groups:** No information.

4. **Finance:** No information.

5. **Regional/International Cooperation:** No information.

## STATISTICAL DATA/INDICATORS

| | 1980 | 1990 | Latest 199- |
|---|---|---|---|
| Fresh water availability (total domestic/external in million $m^3$) | | | |
| Annual withdrawal of freshwater as % of available water | | | |
| Other data | | | |

**Population Covered with Drinking Water and Sanitation Facilities**
**(percentage coverage as on March 31)**

| Item/Area | 1985 | 1990 | 1996 |
|---|---|---|---|
| **Drinking Water Supply** | 56.3 | 73.9 | 82.00* |
| Rural | 72.9 | 83.8 | 85.00* |
| Urban | | | |
| **Sanitation facilities** | 0.7 | 2.4 | 4.64 |
| Rural | 28.4 | 45.9 | 50.00* |
| Urban | | | |

* Estimated figure
Source: Ministry of Rural Areas and Employment

## AGENDA 21 CHAPTER 19: ENVIRONMENTALLY SOUND MANAGEMENT OF TOXIC CHEMICALS, INCLUDING PREVENTION OF ILLEGAL INTERNATIONAL TRAFFIC IN TOXIC AND DANGEROUS PRODUCTS

**NATIONAL PRIORITY:**

**STATUS REPORT:** Chemicals occupy an mportant place in the effort to meet the social and economic goals of the community. However, many chemicals are toxic, highly reactive, explosive or flammable, or have a combination of these characteristics and represent a potential riskto human, animal and plant life, and the environment in general. Extreme care is necessary while handling such chemicals at all stages of manufacture, processing, transportation or use.

The Environment (Protection) Act, 1986emphasises the need for laying down procedures and safeguards for handling hazardous substances and preventing accidents. Four sets of Rules have also been notified under the Environment (Protection) Act, 1986. Manufacture, Storage and Importof Hazardous Chemical Rules, 1989, the Hazardous Waste (Management and Handling) Rules, 1989, the Manufacture, Use, Import, Export and Storage of Hazardous Micro-organisms/Genetically Engineered Organisms or Cells, Rules, 1989and Chemical Accident (Emergencies planning, Preparedness and Responses) Rules, 1996.

Several work programmes for the promoion of safety in the handling of hazardous substances have been planned and operationalised. Risk assessment of chemicas is time and resource intensive. If the Agenda 21 recommendation that major pollutants should be assessed by 2000 AD isto become a reality, data collection and availability have to be fully organised. India is a member of International Programme on Chemical Safety (IPCS) and International Register of Potentially Toxic Chemicals (IRPTC). At the national level, the following efforts are underway:

i) A centrally sponsored scheme to create infrastructure in certain regulatory organisations.
ii) Hazard analysis and off-site emergency plans in sensitive industrial pockets.
iii) The establishment of emergency response centres.
iv) Establishment of poison control centres a select places with some available infrastructure.At present, except for a limited number of hospitals, cases of chemical poisoning are treated only in general emergency wards.
v) The promotion of Epidemiological studiesin areas of high risk. This involves collection of data from hazardous installations, and relating to pollution status,etc.

A data base with full information is essential for the management of hazardous substances. However, available data on even certain commonly used chemicals is inadequate for a comprehensive risk or hazard assessment to be undertaken. While there are some infrastructural facilities at local, State and Central levels, the management of emergencies cannot be satisfactory for the lack of an efficient data base. The Ministry of Environment and Forests has set up a Central Crisis Group Alert System with a Central Control Room fr the management of emergencies due to hazardous chemicals. The Ministry has also established the National Register for Poentially Toxic Chemicals (NRPTC) for collection, collation, analysis and dissemination of existing national and international information on the lines of the IRPTC. However, the Centre requires a widespread network throughout the country a well as coordination with other organisations. An effort in this direction has been made with the establishment of Regiona Registers in three regions.

The risk of poisoning from exposure to dngerous chemicals is acute and casualties take place each year for this reason. The adverse effects of pesticide poisoning ar well known. In 1982, it was estimated that while developing countries accounted for only 50 per cent of the use of pesticides worldwide, over 50 per cent of pesticide poisonings occurred in these countries. Legal provisions exist for strict cotrol measures on chemical poisons under the Insecticides Act, 1968, the Poison Act, 1990 and the Hazardous Chemicals Ruls, 1989. There is a need for institutions that would treat poisoning cases, with access to the latest information, detection mehods and qualified staff, in view of the anticipated rise in the number of cases of chemical poisoning.

A global survey undertaken in 1984-86 indicated that while most developed countries had well-established capabilities for poison control, very few developing countrie had such facilities. The Ministry of Environment and Forests and the Ministry of Health and Family Welfare have felt the ned for setting up a National Poison Control Centre with a network of Regional Centres. A Poison Control Centre has been st up at the All India Institute of

## Status Cont'd

Medical Sciences (AIIMS), New Delhi to provide a full range of clinical, analytical, toxicological and information services to provide quick response against the effects of chemicals on human health.

After the Bhopal disaster of 1984, the Government has taken steps, both regulatory and non-regulatory, to reduce the environmental risk from exposure to chemicals. The Environment (Protection) Act, 1986 was the first step. The Act, inter alia, lays down procedures and safeguards to regulate the handling of hazardous and toxic chemicals. An Act entitled Public Liability Insurance Act, 1 991 was enacted with the objective to render relief to chemical accident victims. Steps have been taken to phase out Benzidine and Benzidine based dyes and intermediates through this instrument. Analogous provisions exist in the Insecticide Act and the Prevention of Food Adulteration Act.

To limit the discharge of pollutants into water and into the air, standards have been laid down under the relevant Acts. The "Polluter Pays Principle" has also been adopted. Environmental impact assessment has been made mandatory in the cases of specified projects and the use of less toxic chemicals, insofar as it is feasible, suggested before the sanction of the environmental clearance.

For prevention and control of major chemical hazards, legal safeguards have been framed under the Hazardous Chemicals Rules notified in 1989 under the Environment (Protection) Act, 1986. Specific requirements have been prescribed for safe transportation of hazardous chemicals. Exposure limits for chemicals and toxic chemicals have also been laid down. Recently, environmental audit has also been made mandatory, one of the aims being to reduce environmental risk. Government is also encouraging the use of Cleaner Production Technologies by providing fiscal benefits. The award of the "Ecomark" to consumer products which are environment friendly also encourages the use of safer chemicals and technologies.

For reducing risk due to chemicals, the long-term objective of Government is to eliminate the use of such substances. However, the experience is that technological information on viable alternatives is generally not available. Consequently, the immediate and complete elimination of toxic chemicals seems difficult. Purification techniques and other end-of-pipe measures are capital and energy intensive and, taken alone, have not yielded the success desired in reducing the discharges of hazardous substances.

There is increasing concern over the movements of products across the boundaries of developing countries carried out in contravention of internationally adopted guidelines and principles. This is especially true of developing countries which do not have the adequate infrastructure to determine the risks associated with such products or to adequately monitor their ingress and egress.

Considerable research expertise exists in India on issues related to the manufacture, use and handling of toxic and hazardous materials. However, the difficulty lies in the inadequate exchange of information and the training of persons actually involved in such process. It is recognised that capacity building is essential in industry especially at factory and plant levels. There is a well established procedure regarding the export import of various products regulated under the Import and Export (Control) Act, 1947 implemented by the Director General of Foreign Trade. Import/Export of many products are also covered under the Drugs and N framed under the Environment (Protection) Act, 1986.

India participates regularly in the meetings of the London Guidelines for the Exchange of Information on Chemicals in International Trade. Modalities for strengthening the legal basis of these guidelines are being worked out. A voluntary code of ethics on international trade in chemicals has also been finalised in consultation with representatives of the chemical industry.

## Cross-Sectoral Issues

1. **Decision-Making Structure:** No information.

2. **Capacity-Building/Technology Issues:** No information.

3. **Major Groups:** No information.

4. **Finance:** No information.

5. **Regional/International Cooperation:** No information.

## STATISTICAL DATA/INDICATORS

## AGENDA 21 CHAPTER 20: ENVIRONMENTALLY SOUND MANAGEMENT OF HAZARDOUS WASTES, INCLUDING PREVENTION OF ILLEGAL INTERNATIONAL TRAFFIC IN HAZARDOUS WASTES

**NATIONAL PRIORITY:**

**STATUS REPORT:**

**The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal was signed in 1992.**

**Additional comments relevant to this chapter** With rapid growth of population and industrialisation during the last two decades, there has been a tremendous increase in the generation of domestic, urban as well as industrial wastes. Though a major part of the wastes generated are of non-hazardous type, substantial quantities of hazardous wastes are also generated. In spite of the several steps taken for management of wastes generated by various sources, only a small proportion of solid wastes are properly utilised and disposed of, with the result that some of these wastes cause environmental degradation and health risks in one way or another. The Hazardous Wastes (Management and Handling) Rules (HW Rules) were notified by the Ministry of Environment and Forests in July, 1989 under the Environment (Protection) Act, 1986. These Rules provide for regulating the generation, collection, storage, transport, treatment, disposal and import of hazardous wastes. 18 categories of hazardous wastes (to which the Rules apply) have been identified and listed in the Schedule annexed to these Rules. One of the important stipulations made under these Rules is that the import of hazardous wastes from any other country to India is not permitted for dumping and disposal. However, import of such wastes are allowed for processing or reuse as raw material, after examination of the merits of each case by the competent authorities.

Under Rule 11 of the Hazardous Wastes Rules, 1989, the exporting country or the exporter is required to communicate details about the proposed transboundary movement of hazardous wastes, to the Central Government. The importer is also required to provide details regarding the wastes to the concerned State Pollution Control Boards. After examining the details provided by the importer/exporter, suitable instructions are issued by the concerned authorities and the Port Authorities are also advised accordingly.

India is a party to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal. Ministry of Environment and Forests has been designated as the Competent Authority. The Convention seeks to promote the reduction in the generation of waste and calls for the international cooperation in development of cleaner technologies. 47 categories of wastes (other than nuclear wastes) have been included in the Convention.

The 3rd meeting of the Conference of the Parties to the Basel Convention held in September 1995 adopted the decision to amend Article 4(a) of the Convention to ban all transboundary movement of hazardous wastes from EC & OECD countries to non-OECD countries for final disposal (i.e. for dumping) with immediate effect and to phase out such movements of wastes destined for recycling and recovery by December 31, 1997. This ban would only be applicable to those wastes that are characterised as hazardous under the Convention. The task of hazard characterization and evolution of lists for Basel wastes and non-Basel wastes has been entrusted to the Technical Working Group of the Basel Convention.

Developing countries have become major recipients of hazardous wastes generated in the industrially advanced countries. Due to the stringent legislations and regulations and the prohibitive costs of treatment and disposal of such wastes in the developed countries, producers of such wastes and their agents find it cheaper to ship hazardous wastes to developing countries. Ministry of Environment and Forests have been receiving communications seeking permission to import hazardous wastes. These include metal containing wastes (ferrous and non-ferrous), waste oil, oil sludge, etc. These are processed in accordance with the requirements under the Hazardous Wastes (Management and Handling) Rules, 1989 and the Basel Convention. A Committee has been constituted for the same.

The wastes from other countries are exported in large quantities and are received in bulk shipments. Such shipments enter through our ports and the Ports and Customs Authorities have a major role in checking and granting permission for entry of these shipments. Such wastes can only be allowed if these are being imported for processing, reuse and recovery and to be used as raw materials in our industry in accordance with the Hazardous Wastes Rules, 1989. The hazardous wastes are included in the restricted lists of imports requiring a licence, which is granted subject to the recommendation under the HW Rules.

**Status Cont'd**

Intimations are required to be given by the exporter/importer in respect of the proposed transboundary movement of the hazardous wastes. Under the Hazardous Wastes Rules, 1989 complete information on the exporter, importer, source of generation, type of waste and its constituents, method of disposal, safety data sheet etc., are required to be furnished by both the exporter as well as importer in Form 6 of these Rules. According to the Basel Convention, the exporter should seek a prior consent in writing from the importing country's Competent Authority (Ministry of Environment and Forests) before the commencement of the shipment. A movement document should accompany the consignment.

Due to indiscriminate exports and exports from non-signatories to the Basel Convention, huge quantities of hazardous wastes may reach Indian ports. In order to arrest this phenomena, waste category No. 1, cyanide waste and waste category No. 4, mercury and arsenic bearing wastes, as per the Hazardous Wastes Rules, 1989 have been prohibited for exports and imports from December 26, 1996.

### Cross-Sectoral Issues

1. **Decision-Making Structure:** No information.

2. **Capacity-Building/Technology Issues:** No information.

3. **Major Groups:** No information.

4. **Finance:** No information.

5. **Regional/International Cooperation:** No information.

### STATISTICAL DATA/INDICATORS

| | 1980 | 1990 | Latest 199- | |
|---|---|---|---|---|
| Generation of hazardous waste (t) | | | | |
| Import of hazardous wastes (t) | | | | |
| Export of hazardous wastes (t) | | | | |
| Area of land contaminated by hazardous waste (km²) | | | | |
| Expenditure on hazardous waste treatment (US$) | | | | |
| Other data | | | | |

## AGENDA 21 CHAPTER 21: ENVIRONMENTALLY SOUND MANAGEMENT OF SOLID WASTES AND SEWAGE-RELATED ISSUES

**NATIONAL PRIORITY:**

**STATUS REPORT:** The major environmental concerns in an urbanising India relate to high levels of water pollution due to poor waste disposal, inadequate sewerage and drainage and improper disposal of industrial effluents. The dumping of solid waste in low-lying areas contributes to land - and ground-water pollution. All these developments have contributed to the deterioration of the urban environment, a critical concern that needs specific interventions for sustainability of human settlements.

A National Waste Management Council (NWMC) has been constituted by Ministry of Environment and Forests to render advice on various matters related to waste management including incentives/disincentives required to facilitate waste utilisation. Representatives of concerned Central and State Government departments, Municipal Corporations, Industry Associations, experts, NGOs and media persons meet from time to time under the Chairmanship of the Minister for Environment and Forests.

For proper management of urban solid wastes, it is essential to know the quantity and nature of wastes being generated and utilised. The Ministry of Environment and Forests has initiated a scheme for survey of solid wastes generated, utilised and disposed off in important towns of the country.

With the objective of emphasising waste reduction and recycling and reuse in industries and better management of municipal solid wastes, a scheme to initiate setting up of pilot projects, conduct surveys and funding of promotional activities in the following areas have been initiated.

i) Municipal solid wastes. a) Survey of urban municipal wastes in important cities, b) Setting up of pilot plants on utilisation of municipal solid wastes.

ii) Setting up of pilot plants for utilisation of industrial wastes.

iii) Development and other promotional activities for municipal and industrial wastes.

At present, solid wastes are utilised to the extent possible by the following processes:

- Conversion of garbage into energy pellets.
- Anaerobic digestion/biogas generation from garbage.
- Composting by vermiculture and other means

A pilot plant has been set up in Bombay for conversion of garbage into energy pellets. It is proposed to set up ten more such plants for which external assistance is likely to be sought. The process of anaerobic digestion/biogas generation from garbage is being utilised at medium and small scale levels at several places in India, and is being encouraged at other places also. The conversion of garbage into compost by vermiculture and other processes is also being promoted. All these processes not only help in waste utilisation but also in producing energy or products of utility.

Apart from organic wastes, several other urban wastes such as waste paper, plastics, glass, rubber, textiles, metals, coconut shells, etc. are extensively recycled. This is encouraged by the Government.

Some of industrial wastes such as fly ash, blast furnace slag, lime sludge, phosphogypsum, red-mud, etc. are generated in large quantities and are sources of environmental pollution. Reuse and recycling of these wastes is being encouraged. Fiscal incentives have been provided in the form of exemption of excise duty on production of building materials using fly ash or phosphogypsum and exemption of custom duty on import of equipment, and machinery, for utilisation of these wastes for gainful purposes.

The collection and disposal of solid wastes is another area of concern of city management in India. No city collects and disposes off its solid wastes in a safe manner and the coverage is often inadequate. An ORG study of 24 cities in 1989 revealed that, while daily solid waste generation was about 15,000 tonnes, only 11,500 tonnes was collected, leaving almost one-fourth of the waste to degenerate within the city environment Even when the collection rate is high, say 90 per cent, the collection frequency is not satisfactory. There is no relationship between coverage of solid waste collection and city size. Furthermore, collection does not necessarily suggest regular service and the frequency varies from twice a week in the mega cities to fortnightly collection in the intermediate towns. This relates to domestic wastes as collection of industrial and commercial wastes is more regular. The disposal of wastes is another issue of concern to

### Status Cont'd

city managers. The method seems to improve with the level of urbanisation, from open-dump in the small and intermediate towns to sanitary landfills in the mega cities.

There are three Centrally Sponsored Schemes for pollution abatement of rivers presently under implementation by the Ministry. These are Ganga Action Plan (GAP) Phase I, Ganga Action Plan Phase II and National River Conservation Plan. The main objective of Ganga Action Plan is to improve the water quality of the Ganga to acceptable standards by preventing the pollution load reaching the river. The Action Plan primarily addresses itself to the interception and diversion and treatment of 873 million litres per day (mld) of municipal sewage out of the estimated 1340 million litres per day from 25 towns, 6 in Uttar Pradesh, 4 in Bihar and 15 in West Bengal.

In order to improve the management urban solid wastes and sewage related issues, there is need for capacity building, awareness and training, improved technologies and the creation of infrastructural facilities. The lack of adequate financial resources, especially at the municipal and local levels remains a constraint.

## Cross-Sectoral Issues

1. **Decision-Making Structure:** No information.

2. **Capacity-Building/Technology Issues:** Under the Ganga Action Plan, emphasis has been given for improvement in the sewage treatment technologies. As a result, the programme has led to the development of some appropriate technologies like Upflow Anaerobic Sludge Blanket (UASB), improved oxidation ponds, sewage treatment through plantation etc. These technologies are cost effective in terms of operation and maintenance and as such will reduce the burden on the State Government on this account. These developments will facilitate Ganga Action Plan and make future programmes sustainable. The programme also lays thrust on maximisation of resource recovery from sewage treatment to improve its sustainability. These include utilisation of biogas for co-generation of power, sale of treated sewage and sludge - a bio-fertiliser and nutrient rich treated effluents for agriculture. Pisciculture is proposed in most of the stabilisation ponds constructed under GAP. Ganga Action Plan has served as a model for the adoption of other rivers. On similar lines, the action plans for rivers Yamuna, Gomti and Damodar etc. are being been taken up.

3. **Major Groups:** No information.

4. **Finance:** No information.

5. **Regional/International Cooperation:** No information.

## STATISTICAL DATA/INDICATORS

| | 1980 | 1990 | Latest 199- |
|---|---|---|---|
| Generation of industrial and municipal waste (t) | | | |
| Waste disposed(Kg/capita) | | | |
| Expenditure on waste collection and treatment (US$) | | | |
| Waste recycling rates (%) | | | |
| Municipal waste disposal (Kg/capita) | | | |
| Waste reduction rates per unit of GDP (t/year) | | | |
| Other data | | | |

## AGENDA 21 CHAPTER 22: SAFE AND ENVIRONMENTALLY SOUND MANAGEMENT OF RADIOACTIVE WASTES

**NATIONAL PRIORITY:**

**STATUS REPORT:** India is also concerned with the environmentally sound management of radioactive wastes. The need for the establishment of a nuclear waste management system in the country was recognised at an early stage of India's nuclear programme. The system takes care of all radioactive waste generated from nuclear facilities as well as in the applications of nuclear materials in industry, research, medicines, etc.

There is a legal framework for the management of radioactive wastes and an independent regulatory body with the responsibilities for carrying out statutory control with regard to health, safety and environmental protection.

R & D support for updating the ever evolving radioactive waste management technology is also provided through identified agencies. Documentation and dissemination of information regarding waste generation storage and disposal is also undertaken though there is scope for increased interaction and exchange of information especially among the developing countries.

## Cross-Sectoral Issues

1. **Decision-Making Structure:** No information.

2. **Capacity-Building/Technology Issues:** No information.

3. **Major Groups:** No information.

4. **Finance:** No information.

5. **Regional/International Cooperation:** No information.

## STATISTICAL DATA/INDICATORS

## AGENDA 21 CHAPTERS 23-32: MAJOR GROUPS

**The role of major groups are also covered under the various chapters of Agenda 21. The following is a summary of main objectives outlined in Agenda 21. Please check the appropriate boxes and describe briefly any important steps or obstacles.**

### STATUS REPORT ON PARTICIPATION BY MAJOR GROUPS AT THE NATIONAL AND LOCAL LEVELS

**Ch. 24: GLOBAL ACTION FOR WOMEN TOWARDS SUSTAINABLE AND EQUITABLE DEVELOPMENT.**
**The Convention on the Elimination of All Forms of Discrimination Against Women was signed in 1993.**

**24.a** Increasing the proportion of women decision makers: No information.
**24.b** assessing, reviewing, revising and implementing curricula and other educational material with a view to promoting dissemination of gender-relevant knowledge : No information.
Curricula and educational material
**24.c and 24.d** formulating and implementing policies, guidelines, strategies and plans for achievement of equality in all aspects of society including issuing a strategy by year 2000 to eliminate obstacles to full participation of women in sustainable development. Policies/strategies etc.: No information.
**24.e** establishing mechanisms by 1995 to assess implementation and impact of development and environment policies and programmes on women: No information.

**Brief comments on this chapter (maximum 100 words) (please, do not exceed this page):** The concept of women's development in the initial Five Year Plans was mainly welfare oriented. In the Fifth Plan (1974-79), however, there was a shift in the approach towards women from 'welfare' to 'development'. The new approach aimed at an integration of welfare with developmental services. The Sixth Plan (1980-85), adopted a multi-disciplinary approach with a three-pronged thrust on health, education and employment. In the Seventh Plan (1985-90), the developmental programmes for women continued with the major objectives of raising their economic and social status and to integrate them better, with mainstream national development.

The Eighth Plan (1992-97), promises to ensure that the benefits of development from different sectors specifically benefit women, and that these programmes be implemented to complement the general programmes. Women must be enabled to function as equal partners and participants in the development process. This approach marks a shift from 'development' to 'empowerment'.

India endorsed the three priority themes of the Fourth World Conference on Women held in Beijing in 1995, i.e., equality, development and peace, and believes that economic independence and equality, in tandem, would create the necessary environment for the realisation of the full potential of women. India also endorsed the Commission on the Status of Women as the most appropriate mechanism to fulfil this task. A national level mechanism to monitor the implementation of the Platform of Action of the Beijing Conference has been institutionalised. India believes that national commitments must be complemented by commitments at the international level.

India believes that gender issues cannot be solely left to market forces and remain the responsibility of both, national governments and international community. Gender equality and equity are necessary pre-conditions for fulfillment of the goals agreed upon at the Beijing Conference. India is a signatory to the Convention on Elimination of Discrimination Against Women (CEDAW). Our Constitution and legal framework uphold the dignity and status of women and seek to create an environment where empowerment is facilitated. A National Commission for Women has been established and the National Human Rights Commission has been mandated to look into human rights issues involving women. A Commissioner for Women's Rights is being appointed. Special cells for preventing crimes against women are also there. The Equal Remuneration Act stipulates payment of equal remuneration to men and women workers for work of equal value. The Act also prohibits any gender discrimination in recruitment and service conditions.

The 73rd and 74th Constitutional Amendment Bills adopted in 1992 by Parliament for strengthening the Panchayati Raj System, i.e., a system of self-governance at the local level both in rural and urban areas, provide that a third of all elected offices in local bodies (rural and urban) are reserved for women.

## Women Cont'd

Two new initiatives were launched for women during the Eighth Plan. The first, Mahila Samridhi Yojana (MSY) launched in 1993, attempts to promote the habit of savings by opening an account in her name.

The second scheme, the National Credit Fund for women called Rashtriya Mahila Kosh (RMK) was set up in March 1993 for meeting the credit needs of poor women and particularly of those in the unorganised sector, who would otherwise have rather difficult access to formal institutional credit instruments. Within a short span of three years, the RMK had by 15th November 1996 sanctioned extended credit limits of Rs. 260 million to 129 NGOs for its further lending. This will benefit over 136,000 women. Out of this amount, Rs. 162.2 million has already been disbursed

Some of the other activities undertaken during the Eighth Plan include, adoption of National Plan of Action for the children and for the girl child; setting up of the National Creche Fund for child care service; adoption of National Nutrition Policy, 1993; integrated Child Development Service (ICDS). ICDS is a major programme for the provision of nutrition needs for the mother and child. This scheme covers the welfare of children below the age of six and expectant and lactating mothers.

With a view to making women economically independent and self-reliant, a number of interventiOns have been launched. The programme of STEP (Support to Training and Employment Programme), seeks to train women for employment in the traditional sectors of agriculture, animal husbandry, dairy, handlooms and handicrafts, etc. Launched in 1987, STEP has benefited more than 250,000 women. The budget provision of Rs. 160 million has been made for STEP during the year 1996-97.

The Mahila Samridhi Yojana (MSY), a central sector scheme, was launched on October 2, 1993. This scheme not only inculcates the habit of thrift amongst rural women but also gives them possession and control over their household resources. The scheme has received an overwhelming response from all over the country. Upto September 1996, a total of about 20 million MSY Accounts were opened and total deposits amounted to over Rs. Two billion

Empowerment of women, being one of the major objectives of the Ninth Plan (19972002), it will ensure to create an enabling environment with requisite policies and programmes, legislative support, exclusive institutional mechanisms at various levels and provide adequate financial and human resources to achieve this objective. An integrated approach will be adopted towards empowering women. This underscores harmonization of various efforts on different fronts, viz., social, economic, legal and political. Further, a special strategy of earmarking of funds as 'women's component' will also be adopted with a close vigil to ensure a flow of adequate share of resources and benefits for women from all developmental sectors both in the Central and State Sectors. To this effect, the Ninth Plan recommends expeditious adoption of the 'National Policy for Empowering Women' along with a well defined Gender Development Index to monitor the impact of its implementation in raising the status of women from time to time

India is committed to increase investment on education to six per cent of GDP, with the major focus on women and the girl child. The Government is committed to universalise mother and child care programmes to reach out every corner of the country. A National Policy on Women, to guide and inform action at every level, has been formulated. Efforts will be made to fulfil the goal 'Education for Women's Equality' as laid down in the revised National Policy on Education (NPE) . 1992

Economic empowerment of women is mainly based on their participation in decision making process with regard to raising and distribution of resources, i.e, incomes, investments and expenditure at all levels. The entire effort of empowering women is to help them to exercise their rights in decision making at all levels and in every sphere, both within and outside the household as equal partners in the society. Efforts will be made to enhance her capacity to earn besides the access to and control/ownership of all family/community assets. In support of women in the informal sector, Rashtriya Mahila Kosh will be further strengthened/expanded to extend both 'forward' and 'backward' linkages of credit and marketing facilities.

Considering the strong impact of environmental factors on the sustenance and livelihood of women, full participation of women will be ensured in conservation of environment and control of environmental degradation. Further, women will be involved and their perspectives reflected in the policies and programmes of management of eco-system and natural resources.

### Women Cont'd

Application of science and technology is vital for the advancement of women. Technology will reduce household drudgery and provide better working conditions for women, particularly in rural areas with emphasis on improvement of the environment and quality of life of women at an affordable cost.

During the Ninth Plan, a Media Policy will be framed in such a way that it becomes an Instrument in projecting a positive image of the girl child and women. Strict ban on the depiction of demeaning, degrading, negative and conventional stereotypical images of women and violence against women will be enforced through legislation, regulatory mechanisms and media policies.

## STATUS REPORT ON PARTICIPATION BY MAJOR GROUPS AT THE NATIONAL AND LOCAL LEVELS

**Ch. 25: CHILDREN AND YOUTH IN SUSTAINABLE DEVELOPMENT.**

**25.a** establishing processes that promote dialogue between the youth and government at all levels and mechanisms that permit youth access to information and opportunity to present their views on implementing A21 : No information.

**Describe their role in**
**the national process:** No information.
reducing youth unemployment

**25.c** ensuring that by year 2000 more than 50% of youth -- gender balanced -- have access to appropriate secondary education or vocational training: No information.

**Brief comments on this chapter (maximum 100 words) (please, do not exceed this page):** Investment on child development is viewed not only as a desirable societal investment for the nation's future but also as fulfillment of the rights of every child to 'survival, protection, and development' so as to achieve their full potential. The "Convention on the Rights of Child" ratified by India in 1992 is the guiding principle for formulating necessary policies and programmes of child development. There is also a National Policy For Children (1974) which is being suitably reviewed.

A significant programme for the development of children during Eighth Five Year Plan (1992-97) has been launching of the Integrated Child Development Services (ICDS), which is one of the world's largest and unique programmes, which aims at providing an integrated package of health, nutrition and educational services to children below six years, pregnant women and nursing mothers. The beneficiary coverage of ICDS is now 18.4 million children and 3.8 million mothers who are reached through 3946 ICDS projects/342,000 Anganwadis. Out of 3946 ICDS projects, 755 projects are being implemented with the World Bank assistance in pre-dominantly tribal and backward areas of Andhra Pradesh, Orissa, Bihar and Madhya Pradesh providing certain additional services. In 507 ICDS blocks, services such as health, nutrition etc. have been extended to nearly 350,000 adolescent girls in the age group of 11-18 years, particularly the school drop-outs. Some of the other activities undertaken include:

i) Adoption of National Plan of Actions for the children and for the girl child; ii) Adoption of the National Nutrition Policy, 1993; iii) Setting up of National creche fund for child care services;
iv) Creches for Children of working/ailing mothers. v) Balwadi Nutrition Programme;
vi) Early Childhood Education through Assistance to Voluntary Organisations; vii) Balsevika Training Programme;
viii) Assistance to Voluntary Organisations in the field of Welfare of Women and Child Development.

During the Ninth Plan (1997-2002), following universalisation of ICDS and ensured availability of basic minimum services for the overall development of the child, emphasis will be on consolidation and content enrichment of ICDS through adequate nutrition, supplemented with necessary health check-ups, immunization and referral services. In this respect, priority will be accorded to focus attention on the child below 2 years. To achieve this, ICDS will continue to be the mainstay of the Ninth Plan to promote all round development of the young child.

India has all along followed a pro-active policy in the matter of tackling the problems of child labour. The present regime of laws relating to child labour has a pragmatic foundation and is consistent with the International Labour Conference Resolution of 1979 which calls for a combination of prohibitory measures and measures for humanising child labour, wherever the same cannot be outright eliminated in the short-run.

The policy of the Government is to ban employment of children below the age of 14 years in hazardous employments, to regulate the working conditions of children in other employments. The Child Labour (Prohibition and Regulation) Act, 1986 seeks to achieve this objective.

The Government announced the National Policy on Child Labour in August,1987. The Action Plan under the National Child Labour Policy (NCLP) comprises:

- A Legislative action plan.
- Focusing of general development programmes for benefiting child labour.
- Project-based action plan in areas of high concentration of child labour.

## Women Cont'd

A major activity undertaken under the NCLP is the establishment of Special Schools to provide basic needs like non-formal education, pre-vocational training, supplementary nutrition, etc. to the children withdrawn from employment.

Voluntary agencies are being financially assisted to the extent of 75 per cent for taking up welfare projects for working children under a Grants-in-aid Scheme.

The scheme of day care centres is being implemented through the Central Social Welfare Board in order to provide day care services to children below 5 years and belonging to the weaker sections of society.

The thrust in youth affairs has been to involve youth in the entire gamut of the developmental process as the youth are a major resource in the task of nation building. Youth activities will continue to focus on environmental and health programmes such as greening of wastelands, solid waste management, anti-smoking campaign, prevention of drug abuse, health education with emphasis on reproductive health and prevention of AIDS, population control as well as various adventure activities.

Major schemes undertaken during the Eighth Plan include National Service Scheme (NSS) and Nehru Yuva Kendras (NYK).

The National Service Scheme (NSS) of Youth Affairs provides for the development of their personalities through community services. The programme has successfully taken up activities which have a social orientation like literacy, environment enrichment, national integration, significance of community management of resources, etc.

The scheme of Nehru Yuva Kendras aims at providing the rural and non-student youth with opportunities to take part in the process of National development as also to develop their own personality and skills. During 1992-95, the activities conducted include camps, vocational training, rural sports and games, rural cultural activities, youth club development programme, functional literacy implementation and campaign on human survival value. During the Ninth Plan, greater access will be given to the rural and marginalised youth in the vocational training programmes of Nehru Yuva Kendras by involving the NGOs, self-help groups and community polytechnics in the task. The thrust in sports will be on providing greater access to sport facilities through substantial investments in physical education, infrastructure development including centres of sports physiology and sports medicine and in creating widespread awareness for physical fitness through nutrition, health education and yoga with special focus on school children. Area specific sports programmes recognising the traditional sports skills of the inhabitants, specially tribal population will receive priority consideration. Rural sports programmes will be revamped in order to tap vast talents available in the rural areas. Special attention will be accorded to the promotion of sports and games among the disabled. The need for a holistic approach that will integrate youth programmes within the context of education is well recognised and will guide all actions.

## STATUS REPORT ON PARTICIPATION BY MAJOR GROUPS AT THE NATIONAL AND LOCAL LEVELS

### Ch. 26: RECOGNIZING AND STRENGTHENING THE ROLE OF INDIGENOUS PEOPLE AND THEIR COMMUNITIES.

**26.a** establishing a process to empower indigenous people and their communities -- through policies and legal instruments: No information.
**26.b** strengthening arrangements for active participation in national policies: No information.
**26.c** involving indigenous people in resource management strategies and programmes at the national and local level: No information.

**Brief comments on this chapter (maximum 100 words) (please, do not exceed this page):** The whole population of the country is indigenous to India. However, about 7 per cent of the country's population belongs to tribal communities. The Tribal groups are backward both economically and socially. Existing development programmes have not been able to alleviate their condition fully. An Action Plan incorporating total food and nutrition security, health coverage, education facility and financial assistance, etc. in keeping with their socio-cultural conditions is being prepared by the Government. The Action Plan will have in-built flexibility to cater to the specific needs of each Tribe and its environment.
The Constitution of India provides special privileges to the Scheduled Tribe communities. The Constitution provides reservation of 7.5 per cent of vacancies for the Scheduled Tribes in the matters of employment and promotion.

The 1991 census results show that most of the Scheduled Tribe population living in rural areas have low levels of literacy and are employed mostly in the primary sector. Special Component Plan (SCP) and Tribal Sub-Plan (TSP) have been designed to channelise the flow of funds out of the State/Central Plans from various sectors of development to benefit the Scheduled Tribes for their socio-economic development. These special plans are being monitored in the sectoral plans for education, health, family welfare, housing and urban development, women and children so that the disadvantaged tribal groups can be better provided for.

National Scheduled Tribes Finance and Development Corporation has been set up with the objective of accelerating economic growth and development of the members of the Scheduled Tribes and assisting them by providing necessary funds at concessional rates for starting projects like Agriculture and Allied activities, Horticulture, Animal Husbandry and Dairy Development, Minor Irrigation, Small Industries, Trades and Services and Transport, etc.

The Centrally sponsored scheme of post-matric scholarship for Scheduled Tribe students has been modified with effect from 1995, thereby revising the maintenance allowance rates, income ceiling for eligibility and study charges. The restriction of providing benefits of the scheme to two children per family has been relaxed in the case of girl students pursuing correspondence courses and they are now eligible to get book allowance in addition to earlier reimbursement of non-refundable fees.

Tribal Development in the Programme for Special Central Assistance (SCA) for Scheduled Tribes is also an additive to the State Plan efforts for implementation of various socio-economic programmes for the welfare of Scheduled Tribes.

During the Ninth Plan (1997-2002), a high priority will be accorded to empowering the Scheduled Tribes, both economically and socially to enable them to join the mainstream of national development at the earliest. To this effect, efforts will be made to create an environment that is conducive to their being able to lead a life of freedom and dignity and exercise their rights and privileges like any other citizen in the country. The necessary legislative support for this purpose will be provided. The development of these Scheduled Tribes will be consistent with the concept of economic growth with social justice.

Efforts will be made by the Government to minimise the gap that exists between these target groups and the rest of the society, by bringing about an all round development of these Groups, in both qualitative and quantitative terms, by taking advantage of inputs from both governmental and non-governmental agencies.

Efforts will also be made by the Government to ensure that the tribal economy is protected and supported against threats from the external markets. The ownership/ patent rights of the tribal people in respect of minor forest produce vis-a-vis the use of medicinal plants will be protected.

## STATUS REPORT ON PARTICIPATION BY MAJOR GROUPS AT THE NATIONAL AND LOCAL LEVELS

### Ch. 27: STRENGTHENING THE ROLE OF NON-GOVERNMENTAL ORGANIZATIONS: PARTNERS FOR SUSTAINABLE DEVELOPMENT.

**27.a** developing mechanisms that allow NGOs to play their partnership role responsibly and effectively: No information.

**27.b** reviewing formal procedures and mechanisms to involve NGOs in decision making and implementation: No information.

**27.c** promoting and allowing NGOs to participate in the conception, establishment and evaluation of official mechanisms to review Agenda 21 implementation: No information.

**27.d** establishing a mutually productive dialogue by 1995 at the national level between NGOs and governments: No information.

**Brief comments on this chapter (maximum 100 words) (please, do not exceed this page):** All the programmes and activities in social sector cannot be implemented by Government alone. The participation of the community, its involvement and the efforts of voluntary organisations have always had a significant role in this sphere. Efforts have been made to strengthen the involvement of non-governmental and voluntary organisations in reaching vast sections of population and also to promote community awareness and participation in various programmes in the social sector. In many schemes, the various Ministries/Departments have been providing funds to non-governmental organisations for undertaking developmental activities in sectors relating to drinking water, health, sanitation, education and environment, etc.

The Eighth Plan has placed emphasis on people's participation and voluntary action in rural development. The role of voluntary agencies has been defined as providing a basis for innovation with new approaches and integrated development, ensuring feedback regarding impact of various programmes and securing the involvement of local communities, particularly, those below the poverty line.

The Council for Advancement of People's Action and Rural Technology (CAPART) is the agency for providing and assisting voluntary action in the area of rural development. Its funds comprise of grants from the Government of India. Programmes of the Ministry of Rural Areas and Employment like the Employment Assurance Scheme (EAS), Integrated Rural Development Programme (IRDP), Jawahar Rozgar Yojana (JRY),

Development of Women and Children in Rural Areas (DWCRA), Training of Rural Youth for Self Employment (TRYSEM), Accelerated Rural Water Supply, Central Rural Sanitation Programme, etc. are implemented by voluntary agencies through the assistance of CAPART. In addition, CAPART has taken initiatives in promoting a variety of activities for transfer of technology, people's participation, development of markets for products of rural enterprises and promotion of other developmental activities and delivery systems in the non-government sector.

With a view to bring CAPART near to the people and to ensure closer interaction between it and voluntary organisations at the grassroots level, the functioning of CAPART has been decentralised into six regional centres. It is expected that the decentralisation of CAPART would not only result in improving its efficiency and efficacy, but would also be successful in promoting, spreading and strengthening the role of voluntarism in rural development.

# STATUS REPORT ON PARTICIPATION BY MAJOR GROUPS AT THE NATIONAL AND LOCAL LEVELS

## Ch. 28: LOCAL AUTHORITIES' INITIATIVES IN SUPPORT OF AGENDA 21.

**28.a** encouraging local authorities to implement and monitor programmes that aim to ensure participation of women and youth in local decision making.

**Brief comments on this chapter (maximum 100 words) (please, do not exceed this page):** A decentralised approach to planning has been introduced in India through a system of Panchayati Raj and Nagar Palika (local self-governments of urban cities/ towns) institutions. With the enactment of the Constitution Amendment Act (1992), Panchayati Raj Institutions (PRIs) have been revitalised and a process of democratic decentralisation has been ushered in.

Consequent to the 73rd Constitutional Amendment Act, State Governments have enacted enabling legislations providing for elected bodies at the village, intermediate and district levels, with adequate representation from the weaker sections and women. Almost all the States have constituted Panchayati Raj bodies.

The State Governments are further required to endow the Panchayats with power and authority necessary to enable them to function as institutions of self-government with the responsibility of preparing plans for economic development and social justice and implementing them. In the Ninth Plan, it is expected that the 29 subjects identified in the Eleventh Schedule of the Constitution would be transferred to Panchayati Raj Institutions. Correspondingly, transfer of resources would have to be effected. In addition, they would require personnel and administrative support. Staff engaged in particular works/departments should be transferred along with the work to the Panchayati Raj Institutions.

As per provisions of the Constitution 74th Amendment Act, the Urban Local Bodies/ Municipalities prepare plans for the development of urban areas. The municipalities are the focal institutions for the provision of urban infrastructure and delivery of services and the States would have to endow them with commensurate functional and financial powers and responsibilities.

While the urban local bodies would have a share in the revenue of the States, they would have to be permitted to levy their own taxes/cesses at the local level. These could include professional tax, property tax, entertainment tax and motor vehicle taxes etc. In addition, they could levy user charges and licence fees, wherever feasible. Some of the municipalities in cities could also raise resources from the market by issue of bonds.

As per Article 243 (G) of the 73rd Constitutional Amendment Act, the Panchayati Raj Institutions will prepare plans for economic development and social justice. Thus the core function of the PRIs would be planning at the local level through the institution of the District Planning Committees. The District Planning Committees will provide the umbrella for the preparation of integrated district development plan. However, certain broad principles would have to be laid down for assigning a role to each of the three-tiers; the actual devolution could be based on the rule that what can be done at a lower level should be done at that level, and not a higher level. The Gramsabha would list out priorities and assist in the selection of beneficiaries for various programmes and schemes. In this way, the aspirations of the people would be articulated. Thereafter, the planning process would begin from below (bottoms up approach) with the preparation of village plans which would be incorporated into the intermediate level plans and finally merged into a district plan.

In so far as earmarking of resources for decentralised planning is concerned, the recommendation of National Development Council (NDC) that 41 per cent of plan resources be set apart for this is expected to be the objective during the Ninth Plan. This could include a proportion as untied funds and as 'incentive grants' to match the contribution raised by PRIs. Thereafter, sectoral allocations at the State level should be on the basis of demands made from below by the districts and in keeping with national priorities. In this way, it would be possible to bring about both a vertical and a horizontal integration of resources and services. The PRIs would provide an umbrella for the convergence of various sectoral, poverty eradication and area development programmes at each tier and the vertical integration would be facilitated by an integration of area plans from the village to the State level. This would ensure a synergy between macro-level and micro-level objectives.

A comprehensive and time bound training policy would be formulated in order to ensure that the Panchayati Raj functionaries are equipped with information regarding various programmes/schemes of the governments, available technologies and other relevant information which have to be disseminated amongst the local people. While the Central Government could provide for training of trainers, the State Government would have to take up training at the more decentralised levels in keeping with the local training requirements.

Awareness building among the people will be given top priority. The government machinery, voluntary organisations and self-help groups will be involved in the process of advocacy and in organising the people, especially the poor. Participation of people can be encouraged through beneficiary/functional committees which should be given the responsibility of overseeing the implementation of various programmes. Social audit and transparency in the functioning of PRIs is crucial for the growth and development of these institutions. These will be the important goals of the decentralisation strategy during the Ninth Plan.

## Ch. 29: STRENGTHENING THE ROLE OF WORKERS AND THEIR TRADE UNIONS.

**29.a** full participation of workers in implementation and evaluation of A21: No information.

**29.b** (By year 2000, (a) promoting ratification of ILO conventions; (b) establishing bipartite and tripartite mechanism on safety, health and sustainable development; (c) increasing number of environmental collective agreements; (d) reducing occupational accidents and injuries; (e) increasing workers' education and training efforts: No information.

**Brief comments on this chapter (maximum 100 words) (please, do not exceed this page):** Labour policy in India derives its philosophy and content from the Directive Principles of State Policy enshrined in the Constitution of India and has been evolving in response to specific needs of the situation to suit the requirements of the planned development and social justice. It has been envisaged that economic growth should not only increase production but also absorb the backlog of the unemployed and add a substantial proportion of additional work force.

The majority of the workforce in India is unorganised in nature. 80 per cent of the workforce is living in rural areas, 64 per cent being engaged in agriculture. 85 per cent of the workforce is self-employed or employed on casual wages and only 15 per cent is on regular salaried employment. Access of women to employment compared to men is lower because of their lower access to education and skill development. The Government has implemented many welfare measures for the benefit of workers. In 1995, Government of India implemented a new pension scheme in place of family pension scheme which was launched in 1971 for the workers. The Payment of Gratuity Act was amended in May, 1994 scrapping the eligibility ceiling for its application and enhancing the ceiling on gratuity payment.

The labour policy during the Ninth Plan (1997-2002) will rationalise, simplify and integrate Labour Laws to bring them in tune with the needs of the changing socioeconomic scene. At the same time, the existing legislative framework will be strengthened to protect the interests of the labour in the unorganised sector. The following specific steps will be taken:

i) In the context of newly emerging labour market scenario, the role of the Employment Exchanges will be reoriented from being mere registration and placement agencies to centres for compilation and dissemination of comprehensive market information, promotion of self-employment, career counselling and vocational guidance.

ii) For the improvement of economic and working conditions of the workers in the unorganised sector, a multi-dimensional approach will be adopted with involvement of voluntary organisations and schemes meant for the welfare of the unorganised sector and for bringing about awareness among them of their legislative entitlements.

iii) An integrated approach will be adopted to rehabilitate bonded labour by pooling resources from a variety of sources

iv) Abolition of child labour will be attempted through a multi-pronged approach involving identification and enumeration of child labour and their eventual emancipation.

v) Women will be provided access to education, training and skill development to enable them to improve their productivity, access to employment and to take up new jobs involving technological changes. Necessary legislative protection for home workers to protect and safeguard their interests and promote their well being will also be initiated

vi) Social security will be provided to workers both in the organised and un-organised sectors. An Integrated Comprehensive Scheme of Social Security will be evolved by having a single legislation covering all the existing social security schemes.

vii) Occupational health and safety measures will be provided at the work place to improve the overall productivity of the workers.

viii) Educational and training systems will be reoriented towards improving their capability to supply the requisite skills and introduce greater flexibility in the training system so that it may become responsive to labour market changes.

ix) Functional autonomy will be granted to the training institutions to make them responsive to the changing skill requirements of industries. Training, curricula and equipment, tools and other infrastructure will be upgraded.

x) Regional Vocational Training Institutes for Women will be expanded and further strengthened. All out efforts will be made to encourage eligible women trainees for enrolment in the Women Industrial Training Institutes (ITIs) and Women Wings of general ITIs through suitable incentives, so that the reservation available to them may be optimally utilised.

**30: STRENGTHENING THE ROLE OF BUSINESS AND INDUSTRY.**

**30.a** increasing the efficiency of resource use, including reuse, recycling, and reduction of waste per unit of economic output : No information.

**30.b** encouraging the concept of stewardship in management and use of natural resources by entrepreneurs: No information.

**List any actions taken in this area:** No information.

**30.c** increasing number of enterprises that subscribe to and implement sustainable development policies : No information.

**Brief comments on this chapter (maximum 100 words) (please, do not exceed this page):** Indian industry is today on a fast track of growth and with the Government commitment to industrial liberalisation the pace of growth is expected to accelerate. It is a big challenge before the industry to respond to Government's aspirations, so that the economy picks up and the advantages of industrialisation are passed on to the people. Industry is also aware of its responsibilities towards environment and is committed to sustainable development. The compliance levels have gone up which is clearly indicated by the fact that out of 1551 units identified as highly polluting industries under 17 categories, 1259 units have provided requisite pollution control facility.

The reasons for the upswing includes pressure on account of mounting legislations, growing awareness and commitment of industry towards social responsibilities, increasing realisation that pollution prevention means good business as also increasing public awareness. Further progress at this stage is not a function of desire or intent but one of technological and other feasibility barriers.

In recent years, business and industry have made significant efforts towards)reducing the impact of industrial activities on the environment, including the investment of considerable resources in to the development of environmental management systems and environmentally sound technologies.

The concept of green business is result oriented and would have far reaching effect on our environment. The International Standardization Organisation has introduced systems of quality (ISO 9000) control and methods for verifying the environmental soundness (ISO 14000) of the companies. The business community has recognised that in order to stay in business, it will increasingly have to integrate environmental consideration into business strategy and long term planning.

Although some improvement in environmental performance can be expected due to the adoption of a systematic approach, it should be understood that the environmental management system is a tool which enables the organisation to achieve and systematically control the level of environmental performance that it sets itself. The establishment and operation of an environmental management system will not, in itself, necessarily result in an immediate reduction of adverse environmental impact.

Indian business and industry associations such as Federation of Indian Chamber if Commerce and Industries (FICCI), Confederation of Indian Industry (CII), etc. work in partnership with the Government specially with the Ministry of Industry, Ministry of Environment and Forests and the Ministry of Energy (Power and Non-Conventional Energy Sources) as well as Pollution Control Boards both at Central and State level.

Indian Business and Industry is even promoting the cause of Sustainable Development beyond the boundaries of their enterprises by participating in initiatives, such as population management, social development and community affairs, rural community development, literacy programme, HIV AIDS awareness programmes Industry and the Government, both have started recognising that implementation of normative measures through environmental laws and standards alone would not serve the cause of Sustainable Development. There has to be a prudent mix of fiscal and regulatory approach if use of cleaner production technologies in Indian Industry will have to be induced.

In order to adopt best environmental management practices, Indian industry has started framing their corporate environment policies or SHE (Safety, Health and Environment) Policies. Many companies, especially export oriented units now have written environment policies and the trend is picking up. The practices essentially flow out of the key elements of such policies, environmental objectives and targets.

## STATUS REPORT ON PARTICIPATION BY MAJOR GROUPS AT THE NATIONAL AND LOCAL LEVELS

### Ch. 31: SCIENTIFIC AND TECHNOLOGICAL COMMUNITY.

**31.a** improving exchange of knowledge and concerns between s&t community and the general public.
Scientific community has already established ways in which to address the general public and deal with sustainable development: No information.

**31.b** developing, improving and promoting international acceptance of codes of practice and guidelines related to science and technology and its role in reconciling environment and development: No information.

**Brief comments on this chapter not already described in chapter 35 (maximum 100 words) (please, do not exceed this page):** As part of the Ministry of Science and Technology, the Department of Science and Technology (DST) was established in 1971, to formulate policy statements and guidelines in Science and Technology. Consistent with goals and objectives, various programmes and activities of the Department are aimed at encouraging Scientific and Technological Community and promoting new areas of Science and Technology (S&T) .

Science and Technology Advisory Committees have been set up in most of the development departments like Steel, Coal, Mines, Petroleum, Transport, etc. for formulation, implementation and monitoring of S&T programmes relevant to the concerned sector.

In order to promote science and technology activities at the grass root level, State Science and Technology Councils/Departments have been strengthened and their interaction with various scientific institutions and development departments ensured for effective implementation of location specific projects/programmes.

To take an overall view of the scientific efforts and policy guidelines for the development of science and technology in the country, a Cabinet Committee on Science,and Technology was set up at the apex level. For the implementation of the recommendations of the Scientific Advisory Committee to the Cabinet, an Empowered Committee of Secretaries on Science and Technology has also been constituted.

Recognising the need for accelerating the people's participation in decision making, National Council for Science and Technology Communication (NCSTC) provides a forum for science and technology popularisation aimed at introduction of value system receptive to S&T and inculcation of scientific temper among the people at large. Programmes of the Department are geared towards generating employment and entrepreneurship skills for motivating University science graduates to participate actively in the economic growth of the country. Science and Technology Entrepreneurship Parks to provide links amongst Universities, Research Laboratories and Industry.

The Government has been a major player in capacity building through increasing research support and has achieved full cooperation of S&T community in the decision making process. The financial support to basic research has been more than doubled, in the last five years. Capability enhancement through training programme, contact programmes and fellowships has been encouraged. Efforts have been mounted towards integration of Science and Technology with socio-economic development and the different ministries have set up Science and Technology Advisory Committees (STACs) to identify, formulate and support S&T programmes relevant to the concerned sector with the participation of industry.

To accelerate the development and application of indigenous technology in production process, a new fund for technology development and application has been set up. The Department also fosters International Cooperation in Science and Technology leading to exchange visits and establishment of special joint centres/projects. Areas which need strengthening are exchange of knowledge and concerns at all levels and broadening the range of developmental and environmentally sustainable activities leading to models of joint implementation through requisite cooperation and support.

For the socio-economic development of Rural and Urban Poor, Women, Weaker Sections, Scheduled Castes and Tribal Population, etc. a number of technologies have been developed on carp breeding, seed raising, rain water harvesting, soak pits, water filters, water testing kits, low cost toilets, etc.

Development of technologies apart, efforts have been made through S&T Entrepreneurship Development Programme for the creation of a number of job opportunities through training and awareness. Several science popularisation programmes like Bharat Jan Gyan Vigyan Jatha, National Children Science Congress, Radio serials and TV serials on science themes have also been initiated.

## STATUS REPORT ON PARTICIPATION BY MAJOR GROUPS AT THE NATIONAL AND LOCAL LEVELS

### Ch. 32: STRENGTHENING THE ROLE OF FARMERS.

32.a promoting and encouraging sustainable farming practices and technologies : No information.

32.b developing a policy framework that provides incentives and motivation among farmers for sustainable and efficient farming practices : No information.

32.c enhancing participation of organizations of farmers in design and implementation of sustainable development policies: No information.

**Brief comments on this chapter (maximum 100 words) (please, do not exceed this page):** The major thrust of the agricultural development programmes in India is on improving the efficiency in the use of scarce natural resources, namely, land, water and energy. This can be achieved only through improved productivity in a cost-effective manner, which alone could increase the welfare of the farmers and agricultural labour. Balanced and integrated use of fertilizers, agricultural credit, institutional support, accelerated investments in agriculture, enhancing the competitiveness of agro-exports, creation of additional irrigation facilities, etc. have been given encouragement through various schemes and activities by the Government.

Eighth Plan has a major focus on generation of employment opportunities so that by the turn of the century near full employment situation could be created. The main objective of the strategy is to generate sufficient job opportunities to absorb unemployed and under-employed persons in agriculture and also to provide jobs to new entrants to the labour force. For creating larger growth of employment, agriculture sector provides one of the best avenues.

Multi-tier infrastructure has been created at National, Regional, State, Divisional and District Levels for training of farmers, farm youth and farm women. The National Institute of Management has been established at Hyderabad to cater to the needs in extension management. Four Extension Education Institutes have been established on regional basis to provide training in communication technology and extension methodology. Krishi Vigyan Kendras and Farmers' Training Centres also provide grassroots level training facilities to farmers and farm women.

Under the scheme titled "exchange of farmers within the country", which has been in operation since 1990, opportunities are provided to farmers to tour from less developed areas to agriculturally developed areas in groups and observe the progress made by their counterparts in the fields of agriculture, horticulture and animal husbandry and allied subjects, so that they could adopt the technology on their own farms.

To introduce and build up an institutionalised system of providing direct feedback from farmers to the scientists on problems and constraints in agriculture and communicating relevant technological advances to the farming community, a scheme entitled "Farmers-Scientists Interaction on Agro-Climatic Zone Basis" has been formulated on pilot basis. This regular system of interaction provides a forum for on the spot identification of field problems and suggestions for remedial measures thereto. 17 States are covered by this programme and a proposal for covering other States and Union Territories is under consideration.

In order to promote people's participation, the practising farmers, village youth and school dropouts are working as focal points for disseminating low cost technology and producing the plant material for conservation measures. Stress is being laid on organising self-help groups to institutionalise people's participation to improve household production systems (mushroom cultivation, sericulture, bee-keeping etc.)

National Cooperative Development Corporation has broad based its Cooperative Farmers' Service Centre Scheme for providing financial assistance to farmers' service cooperatives. Under this scheme, all types of societies engaged in retail distribution of fertilizer and other agricultural inputs and non-credit activities are covered for assistance depending upon their requirement. The main objective of the scheme is development of Cooperative Societies as effective Farmers' Service Centres for undertaking supply of a wide range of agricultural inputs and also to meet the noncredit needs of farmers.

In order to bring awareness among farmers and popularise the concept of integrated Pest Management (IPM), Training and Demonstrations have been undertaken for dissemination of IPM technology. Bio-pesticides and pesticides of botanical origin, like neem-based formulations are being encouraged through Farmers' Field Schools.

A Central Sector Scheme for Women in Agriculture has been launched in 7 States during the Eighth Five Year Plan which envisages, motivation and mobilisation of farm women to be organised into groups so that the agricultural support, such as input technology and extension could be channeled through them.

## AGENDA 21 CHAPTER 33: FINANCIAL RESOURCES AND MECHANISMS

**Financial resources and mechanisms are also covered under each sectoral chapter of Agenda 21 where relevant. This summary highlights broader national financial policies, domestic and external (including ODA)**

**NATIONAL PRIORITY:**

**STATUS REPORT:** Implementation of sustainable development programmes as detailed in Agenda 21, requires large amounts of investment. UNCED Secretariat estimated that implementation of all activities under Agenda 21 during 1993-2000 would require additional resources of US $ 125 billion a year. This is in addition to the input of US $ 500 billion a year from the national governments and private sector in the developing countries, to put their countries on a sustainable development path. The figure was arrived at by estimating the cost of addressing sector and resource specific environment and development problems.

The goal of Agenda 21 was to raise additional external funds for sustainable development activities in part by increasing bilateral and multilateral ODA to 0.7 per cent of GNP from donor countries. The fact remains that many of the developing countries are experiencing a net outflow of resources. The average ODA in the post-Rio period 1993-95 has been lower than in the period 1990-92, both in absolute terms and as a percentage of GNP. In fact ODA at an average of 0.29% of GNP in the 1993-95 period has been the lowest in decades. Global Environment Facility is the only new funding mechanism made available to meet additional needs identified in Agenda 21. The amount of about US $ 2 billion with GEF, besides the Montreal Protocol Multilateral Fund to tackle ozone depletion, is almost negligible and has fallen short of even the most conservative estimates of requirements for implementation of Agenda 21. At the national level, the other apparent funding mechanism is budgetary support by developing countries for environment protection programmes. However, public expenditure has its limitations. Developing countries, with their limited domestic savings rely on external finances to supplement their resources and overcome budgetary constraints. With the far from favourable trends in external financing, the ability of developing countries to undertake large scale public expenditure in this field is doubtful. Debt servicing commitments further aggravate the situation. Besides, many developing countries are undertaking economic policy reform, especially fiscal consolidation and are faced with even more stringent budgetary constraints. At best only a modest reallocation of resources is feasible.

While outlining the estimates of financing needs, Agenda 21 fails to identify the mechanisms to ensure their delivery. Discussions at the four meetings of the Commission on Sustainable Development (CSD), and in the Finance Working Group, have developed a very useful framework for identifying new and innovative sources of funding, including a sectoral approach to mobilising funds from within the economy and from external sources. Several of the alternatives highlight the important links between the creation of incentives for the reduction of pollution and wasteful consumption in the North and potential financing for sustainable development in the South. More research work on the formulation of such policy options needs to be undertaken to consolidate the progress achieved and to address the unresolved issues.

**CHANGES IN NATIONAL BUDGET TO ADDRESS SUSTAINABLE DEVELOPMENT:** In India, since 1991, the Government has embarked on a macro economic stabilisation programme. Structural reforms in the foreign trade and payments regime, the tax system, industrial policy and the financial sector have been undertaken, all of which are likely to have implications for the environment. While Government is attempting to raise resources internally for sustainable development, the importance of international assistance cannot be minimized.

India's Eighth Plan had been drafted in the context of severe resource constraints, and a serious balance of payments situation. The sources of financing projected in the Plan differ from earlier Plans in that it seeks to reduce dependence on borrowings, domestic as well as foreign, and on deficit financing, placing greater reliance on resource mobilisation and economy in government expenditure. The Eighth Plan contemplates an investment of Rs. 7,980 billion ($266,000 million). Considerable reliance is placed on savings of the household sector

**NEW ECONOMIC INSTRUMENTS:** India has always emphasised the importance of public investment for sustainable development by providing fiscal concessions and incentives. Since energy-efficient technologies and non-conventional energy technologies directly improve the protection level of the atmosphere, several tax concessions,100 per cent depreciation allowance and investment subsidies have been made widely available. Investments under the National River

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**Action Plan** on Control of River Pollution arising from both municipal and non-municipal waste also produce a major impact on **marine and** ocean-based resources since they control land-based sources of marine pollution in India. However, additional **resources need** to be made available through external sources for implementing various programmes and activities listed in Agenda 21.

**ELIMINATION OF ENVIRONMENTALLY UNFRIENDLY SUBSIDIES:** No information.

**ODA policy issues**

STATISTICAL DATA/INDICATORS

| | 1992 | 1993 | 1994 | 1995 | 1996 |
|---|---|---|---|---|---|
| ODA funding provided or received (Total US$million) | | | | | |
| | Average for 92-93 | | Average for 94-96 | | |
| Net flow of external capital from all sources as % of GDP | | | | | |
| Other data | | | | | |

**Direct Foreign Investment: Actual Inflows vs Approvals**

| | 1991 | 1992 | 1993 | 1994 | 1995 | 1996[1] | Total 1991-1996[1] |
|---|---|---|---|---|---|---|---|
| **Approvals** | | | | | | | |
| Rs. million | 7390 | 52560 | 111890 | 135910 | 374890 | 295130 | 977770 |
| US$ million | 325 | 1781 | 3559 | 4332 | 11245 | 8367 | 29608 |
| **Actual Inflows** | | | | | | | |
| Rs. million | 3510 | 6750 | 17860 | 30090 | 67200 | 58770 | 184180 |
| US$ million | 155 | 233 | 574 | 959 | 2100 | 1670 | 5690 |
| **Actual as % of Approvals** | 48 | 13 | 16 | 22 | 19 | 20 | 19 |

[1] Upto September 1996

Note: The approval and actual figures include NRI Direct investment approved by RBI. All figures related to calendar year.

**Foreign Investment flows by Category[1]**

| | 1991-92 | 1992-93 | 1993-94 | 1994-95 | 1995-96 | 1995-96 (Apr-Dec.)[2] | 1996-97 (Apr-Dec.)[2] |
|---|---|---|---|---|---|---|---|
| **A. Direct Investment** | 150 | 341 | 586 | 1314 | 2133 | 1500 | 1710 |
| a. RBI automatic route | - | 42 | 89 | 171 | 169 | 76 | 83 |
| b. SIA/FIPB route | 87 | 238 | 280 | 701 | 1249 | 872 | 1181 |
| c. NRIs (40% & 100%) | 63 | 61 | 217 | 442 | 715 | 552 | 446 |
| **B. Portfolio Investment** | 8 | 92 | 3649 | 3581 | 2214 | 1121 | 2343 |
| a. FIIs[3] | - | 1 | 1665 | 1503 | 2009 | 1002 | 1511 |
| b. Euro-equities[4] | - | 86 | 1602 | 1839 | 149 | 64 | 812 |
| c. Offshore funds & others | 8 | 5 | 382 | 239 | 56 | 55 | 20 |
| **Total (A+B)** | 158 | 433 | 4235 | 4895 | 4347 | 2621 | 4053 |

1 Figures shown in this table are based on actual inflows

2 Provisional

3 Represents fresh inflows of funds by FIIs

4 Represents the amount repatriated to India by the corporates from the GDR proceeds.

## AGENDA 21 CHAPTER 34: TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGY, COOPERATION AND CAPACITY-BUILDING

**Transfer of environmentally sound technology, cooperation and capacity-building is also covered under each sectoral chapter of Agenda 21 where relevant. This summary highlights broader national policies and actions relating to chapter 34.**

**NATIONAL PRIORITY:**

**STATUS REPORT ON LINKS BETWEEN NATIONAL, REGIONAL AND INTERNATIONAL INFORMATION NETWORKS/SYSTEMS:** Environmentally sound technologies are essential to achieving sustained economic growth and sustainable development. They encompass a total system which includes know-how, procedures, goods and services. Agenda 21 emphasises the need for the access to and the transfer of environmentally sound technologies to developing countries on favourable terms including concessional and preferential terms as mutually agreed, taking into account the need to protect Intellectual Property Rights as well as special needs of developing countries for the implementation of Agenda 21.The implementation of commitments on transfer of environmentally sound technologies and technical know-how, has been disappointing.

Issues of natural resource conservation and agricultural growth cannot be effectively tackled in the absence of an appropriate technological base. In addition, technology is essential for increasing the competitiveness of the Indian economy in international markets. Indigenous development of technology is therefore of the highest importance and deliberate planned steps need to be taken to increase technological self-sufficiency of the nation. Rapid technical progress is altering fundamentally the skills, knowledge, infrastructure and institutions needed for the efficient production and delivery of goods and services. So broad and far-reaching are current technological developments that many see the emergence of another industrial revolution driven by a new technological "paradigm". This paradigm involves, not only new technologies and skills in the traditional sense, but also different work methods, management techniques and organisational relations within firms. As new transport and communications technologies shrink international 'economic space', it also implies a significant reordering of comparative advantage, and trade and investment relations, between countries.

In India, there is considerable technological activity in a wide spectrum of firms. What is most impressive is the number of small and medium sized enterprises that are investing in new technology based ventures, and often striking out in world market as exporters. However, the rest of the industrial sector still needs to invest in technology upgradation. Experience of many developing and industrialised countries suggests that a rapid acceleration of industrial technology development calls for a deliberate 'strategy', in the sense that it requires the government to coordinate and guide an essentially market-driven process.

## Status Cont'd

### MEANS OF IMPLEMENTATION:

In India, the Department of Science and Technology has played an important role in terms of institutional support for building national strengths in scientific fields and technology assessment and forecasting. A number of technology status reports on Energy efficiency and Environmentally Sound Technologies for pollution control and many other areas have been published. The role of Government has been increasingly facilitating through identification of and support towards development of environmentally sound technologies such as CFC alternatives, Clean Coal Technologies, Energy Efficient technologies and others. In the field of environmentally sound technologies, a number of research and development projects have been identified for support. The Ninth Plan projections have stressed the initiation of measures for reducing the energy intensity in different sectors through changes in technology and industrial processes. A critical mass of R&D capacity is crucial for effective dissemination of environmentally sound technologies and their generation locally. Areas which need attention are access to the information on state of art technologies, a framework for dissemination of information on the source of availability of environmentally sound technologies and development of guidelines for transfer of technologies, as well as training of personnel to undertake technology assessment for the management of such technologies.

In order to strengthen the technological capabilities of the Indian industries, both for meeting the national needs and for providing global competitiveness, a number of new initiatives have been launched. A Technology Development Board was established in 1996 with a mandate to facilitate development of new technologies and assimilation and adaptation of imported technologies by providing catalytic support to industries and R&D institutions to work in partnership with each other. Matching grants to R&D institutions showing commercial earnings through technology services was also introduced in 1996 and will be continued and broadened. Already, a long-term perspective called Technology Vision for India 2020 has been prepared which could form the basis of Technology development programmes.

Technology development calls for both general and specific forms of human capital, and emerging technologies are highly skill intensive in both technical and managerial terms. While India is endowed at present with large amounts of high-level human capital, investments in the creation of new skills (as measured by enrolment levels in technical subjects at all levels) are low. In addition, firm level investments in training are highly variable, and large parts of industry invest very little in training. The Small and Medium Enterprises (SME) sector in particular suffers from very low levels of skill, while industrial training institutes are often unresponsive to their needs. R&D in Indian industry has been rising, but the overall level is still low and over three-quarters of research effort originates in the public sector. The Government is undertaking an analysis of current technological trends in industry in order to formulate appropriate policies to encourage R&D.

Technology upgrading requires that Indian enterprises of all types have information on relevant technologies in international markets and also within the country. Many countries have well-developed systems, computerised on-line technology information and dissemination services, often backed up with consultancy and financial assistance for Small and Medium Enterprises to enable them to know about, test, and implement new technologies.

India has a large infrastructure of technology support institutions, some of which are undergoing reform to make them more relevant to industrial needs. A number of universities, especially the Indian Institutes of Technology (IITs), are increasingly interacting with industry on technological matters, while others are outside this circle. There is a need to strengthen "Technology Foresight Programmes" to analyse the implications of emerging technologies, analyse domestic strengths and weaknesses and target future technologies for local development.

Indian technology policies are undergoing significant changes, and on the whole have improved greatly in recent years. They are not, however, ideal.A coherent technology strategy in India must address a number of interconnected elements in the incentive regime and the relevant factor markets and institutions. Technology development generally requires the setting up of clusters of industries that can share information and skills, as in "science parks" or dedicated industrial estates. Some such facilities exist in India, but their efficacy and functioning need to be strengthened.

**• Describe any work being undertaken at the national or local level regarding efforts to promote clean production processes and/or the concepts of eco-efficiency. These processes may include training, preferential financial arrangements, information dissemination and changes in legal or regulatory frameworks.**

No information.

**• Provide information on the adoption of environmental management systems. National reaction to environmental management system standards such as the ISO 14000 Series and others. Please note efforts made at the national level to promote their adoption and the creation of certification infrastructure in order to facilitate access to these standards to local industry.**

No information.

**• List and describe programs or work under way to facilitate the transfer of ESTs to small and medium sized enterprises. Please note efforts to facilitate access to financial resources and other transfer strategies.**

No information.

## AGENDA 21 CHAPTER 35: SCIENCE FOR SUSTAINABLE DEVELOPMENT

**NATIONAL PRIORITY:**

**STATUS REPORT ON NATIONAL SCIENTIFIC KNOWLEDGE, RESEARCH NEEDS AND PRIORITIES:** The promotion of Science and Technology for the cause of development has been one of the guiding principles of planned development in Independent India. The Ministry of Science and Technology with its associated Departments of Biotechnology, Industrial Research and the Departments of Electronics, Ocean Development, Non-Conventional Energy Sources, Space, and Atomic Energy all have different responsibilities in this field.

The Ministry of Environment and Forests is the nodal agency in the Government for environmental protection, and consequently for Natural Resource Management in the widest sense. The linkages with Scientific research and development are clear. The Ministry of Science and Technology promotes research in emerging areas, contributes to technology development and its linkages for future commercialisation, prioritises areas for scientific research and focuses on programmes based on developmental needs. The Ministry participates in international research oriented programmes and also coordinates national research schemes in earth and atmospheric sciences, medium range weather forecasting etc.

It is also important to note the activities of institutions such as National Institute of Oceanography, the National Geophysical Research Institute, and the large number of laboratories under the Council of Scientific and Industrial Research (CSIR), most notably the National Environmental Engineering Research Institute (NEERI). Several universities have departments of environmental sciences. There are also major nongovernmental organisations such as Centre for Science and Environment (CSE), Tata Energy Research Institute (TERI), New Delhi etc., which work in the field of science, environment and development.

Major activities in the Science and Technology include:
- support to research and development projects, national facilities, special technology development programmes, launching of technology mission-mode projects on sugar production technologies, advanced composites and fly ash utilisation and disposal, promoting technology information system, home grown technologies through Technology Information Forecasting and Assessment Council (TIFAC);
- international S&T cooperation and joint programmes with developed countries;
- development of technologies for the socio-economic sector largely directed towards rural and urban poor;
- augmentation of facilities for meteorological forecasting, seismological observations etc.

During the Eighth Plan (1992-97) the major thrust areas have been on basic research in frontline fields; innovative research to achieve self-reliance, diffusion of appropriate technologies and integration of S&T in socio-economic and rural sectors. The Council for Scientific and Industrial Research (CSIR) has made significant achievements in the areas of drugs, pesticides, chemicals, biotechnology etc. Mechanism for the export of technologies and the systems of patenting were strengthened. Future thrust would be on the modernisation of various CSIR laboratories, upscaling of technologies and extension of societal programmes.

Under Bio-technology, the thrust has been in R & D product development, technology transfer and demonstration, integrated manpower development, augmentation of infrastructural facilities and their optimal utilisation, special programmes for specific groups and weaker sections etc. Significant achievements have been made, besides launching of Technology Mission-mode projects on bio-fertilizers, biological pest control and aquaculture. There is a need to formulate a bio-technology profile for the country as well as to ensure transfer of technology.

A technology development fund has been created to accelerate the commercialisation of indigenous technologies. In future, the emphasis would be to strengthen the R&D efforts further, transfer of knowhow to industry, strengthening of international S&T cooperation, operationalisation of the National Centre for Medium Range Weather Forecasting, selective modernisation of infrastructural facilities of the aided scientific institutions etc. The need in this area is the application of research results for technology development leading to the improvement in the quality of life through the involvement of industries/users. There is a need for the S&T entrepreneurship development programmes to be tied up with the employment generation programmes.

### Status Cont'd

## STEPS TAKEN TO ENHANCE SCIENTIFIC UNDERSTANDING, IMPROVE LONG TERM SCIENTIFIC ASSESSMENT, BUILDING OF CAPACITY AND CAPABILITY:

In the area of oceans, emphasis has been laid on stabilising the Antarctic and polymetallic nodules programmes and the development of ocean data and information system. Besides the expeditions to Antarctica, several achievements have been made in the areas of polymetallic nodules programmes, coastal ocean monitoring and prediction system, marine satellite information system, preparation and dissemination of potential fishing zone and the setting up of a new institute, the National Institute of Ocean Technology (NIOT).

The thrust of Space Science and Technology has been on the development and operationalisation of indigenous satellites and launch vehicles. Significant achievements include launching of multi-purpose communication satellites, development of capabilities for the ASLV, PSLV and GSLV and the Remote Sensing application for forest mapping, crop inventory, ground water targeting, flood mapping integrated management for sustainable development through micro-level planning, etc. In the future, second generation multi-purpose communication satellites would be launched. There is a need for advance action in the indigenous technological development of strategic items, capability for launching the INSAT class satellites, building up of necessary inventories by involving industries and stockpiling of the inventories for future INSAT systems.

In the context of New Economic Policy, steps taken to re-orient the S&T activities include: the creation of a Technology Development Fund, closer interactions with the user industries for technology transfer and launching of application oriented R & D programmes. Some additional steps such as a vigorous market-oriented research, creation of a corpus fund through 2-3 per cent of the turnover of major industries for the promotion of industrial R&D so as to reduce the dependence on the budget support eventually from the Government are needed. Also required is the awareness, particularly on the IPR and patents amongst the S &T institutions and universities and the necessary preparation in the Post-GATT scenario.

| STATISTICAL DATA/INDICATORS | | | |
|---|---|---|---|
| | | **Year** | |
| Number of scientists, engineers and technicians engaged in research and experimental development | # | 19-- | |
| Total expenditure for research and experimental development (US$eq.) | $ | 19-- | |
| Other data | | | |

## AGENDA 21 CHAPTER 36: PROMOTING EDUCATION, PUBLIC AWARENESS AND TRAINING

**NATIONAL PRIORITY:**

**STATUS REPORT:** Human Resources Development which is one of the most important needs of India, is receiving the desired attention. The important components of the Human Resource Development include Education, Training, Awareness, Dissemination of Information and Decision making.

The goal of Universal Elementary Education is enshrined in the Constitution of India. It will be our effort to ensure that all school-going children in the age group of 6- 14 are enrolled by the year 2000. Indian system of elementary education is the second largest in the world with 151 million children enrolled in 1994-95 in the age group of 6-14 years covering about 91 per cent of the children in this age group. The important requirement of supportive infrastructure is covered under the scheme of "Operation Blackboard" started in 1987-88.

The main problem faced in the implementation of the programme of elementary education is the high drop-out rates. Efforts have been made towards universal retention by providing free elementary education, there is also a scheme of free textbooks and uniforms. A scheme for mid-day meals (Nutritional Support to Primary Education) has been recently launched. The District Primary Education Programme (DPEP) which became operational in 1994-95, attempts to take a holistic view of primary education development and seeks to operationalise the strategy for Universalisation of Elementary Education, through district specific planning and desegregated target setting.

The National Policy of Education (NPE), 1986 aims at eradication of illiteracy in the age group 15-35 by the year 2000. Eradication of illiteracy (EOI), has been accorded a high priority in the Eighth Plan and is a major thrust area. It is also one of the components of the Minimum Needs Programme (MNP). The National Literacy Mission (NLM) was launched in May, 1988 for achieving universal literacy in the 15-35 age groups. The target is to cover 100 million adult illiterate persons during the Eighth Plan period (1992-97). The emphasis in this regard is on sustainability of literacy skills and the achievement of goals of re-mediation, continuation and application of skills to actual living conditions. This programme also concentrates on education of weaker sections of society like the members of Scheduled Castes and Scheduled Tribes and women.

The Total Literacy Campaign has become the principal strategy of the National Literacy Mission (NLM) in the eradication of illiteracy throughout the country. The target for achieving total literacy is now 2005 AD. As on December 1996, about 417 districts have been covered either fully or partially under the Total Literacy Campaign. Similarly, 178 districts have also been covered either fully or partially under the Post Literacy Campaign. Under all the schemes of NLM, 57.96 million persons have so far been made literate as per NLM norms against an enrolment of 96.80 million. The new scheme of Continuing Education for neo-literates (approved in December 1995) is now under implementation.

The share of both Central and State Governments including local bodies, etc. in financing educational institutions continues to be quite high. It accounted for 92.9 per cent of the total income of educational institutions in 1990-91, whereas the share from fees and endowments and other sources of educational institutions declined sharply. While the Central Government plays an important role for overall policy directions in education and funding of centrally sponsored plan schemes, the State Governments provide most of the funding for the education system. Private initiatives in education may be encouraged for supplementing the public resources. Further, resources must be mobilised by revising fees and other user charges especially for higher levels of education.

In the Ninth Plan, apart from carrying out the directions given by National Policy on Education (NPE) (1992), and keeping in view the declaration of education as an aspect of fundamental human right to life, making the nation fully

## Status Cont'd

literate by the year 2005 will be a committed goal. Around 6 per cent of the GDP will be earmarked for the education sector by the year 2000 and 50 per cent of that will be spent on primary education. Further, substantial funds will be earmarked for imparting technical and vocational skills and training, in order to turn out more employable and self-employed youths. NLM will achieve the coverage of 100 million adults by the year 1998-99 with special attention and effort for the spread of literacy among women and in the States with high incidence of illiteracy. The Mid-day Meal Scheme will be implemented in all the States to ensure regular attendance and retention in primary and middle schools. In every initiative to promote the spread of education, the girl child will be a special focus of attention.

**a) Reorientation of education towards sustainable development**

Environmental education forms an essential ingredient in the education process of the country. The National Policy on Education provides for including, amongst others, environment as an integral part of curricula at all stages of education. The National Council of Educational Research & Training (NCERT), New Delhi has developed syllabi and curricula on environmental education both for Primary and Secondary School level.

A Comprehensive Document titled, "Environmental Education in the School Curriculum", listing the approach and the concepts covered in different subjects at different stages of 12-year schooling, has been published. During 1996-97, a National Resource Centre in Environmental Education has also been established to promote better awareness, understanding and sharing of experiences and materials in environmental education. Effort is being made to develop a Data Bank of various institutions, activities and materials in environmental education to facilitate better interaction and dissemination among the different agencies and the school system.

This country-wide movement of Science Exhibition being organised at the District, State and National levels has helped in spreading environmental awareness and motivated the children to think of the control measures for environmental protection. The NCERT has also developed Audio-Video programmes addressed to school children and teachers on various related themes on environmental education and sustainable development.

Region-Specific Training Modules for District Institute of Educational Training which are rich in environmental concepts have been developed. Environmental Education is made an essential component of training programmes for teachers and teacher educators/trainers. The State Boards of Education have also started follow up action for development of curriculum with environment education as an important input. NGOs are also being encouraged through financial assistance by the government for experimental and innovative work in the field of environment education

**b) Increasing public awareness** No information.

**c) Promoting training** No information.

**ROLE OF MAJOR GROUPS:** No information.

**FINANCING AND COST EVALUATION OF THE LABOUR ACTIVITIES:** No information.

## STATISTICAL DATA/INDICATORS

| | 1980 | 1990 | Latest 199- | |
|---|---|---|---|---|
| Adult literacy rate (%) Male | | | | |
| Adult literacy rate (%) Female | | | | |
| % of primary school children reaching grade 5 (1986-97) | | | | |
| Mean number of years of schooling | | | | |
| % of GNP spent on education | | | | |
| Females per 100 males in secondary school | | | | |
| Women per 100 men in the labour force | | | | |
| Other data | | | | |

## AGENDA 21 CHAPTER 37: NATIONAL MECHANISMS AND INTERNATIONAL COOPERATION FOR CAPACITY-BUILDING IN DEVELOPING COUNTRIES

**National capacity building is also covered under sectoral chapters.**
**Donors: You may wish to describe here how Agenda 21 has influenced your ODA policies in this area.**
**Developing countries: You may wish to describe any new national mechanisms for capacity building - and any changes in technical cooperation.**

**NATIONAL PRIORITY:**

**STATUS REPORT ON NATIONAL ENDOGENOUS CAPACITY BUILDING:** The crucial task of institutionalising sustainable development in India is being achieved by strengthening institutes and governing structures concerned with environment and social infrastructure management. There are certain critical areas in which such activities need to be specifically pursued with greater vigour than before. The key national coordination mechanism for implementation of Agenda 21 is the inter-ministerial process, with the representation of all relevant Ministries and Departments of the Government of India. Prime Minister, as the Chairman of the Planning Commission, is the highest authority reviewing the implementation of the programme of planned development. The principal Ministries involved are the Ministry of Environment and Forests, the Ministry of External Affairs, the Ministry of Agriculture, the Department of Science and Technology, the Department of Biotechnology, the Department of Rural Development and the Ministry of Finance.

The Government of India has laid emphasis on human resource development, on improving the efficiency of existing institutions, on promoting the role of nongovernmental organisations and scientific institutions and in improving the capacity to evaluate environmental impact. A specific recommendation of Agenda 21 for capacity building is that countries should devise their own national strategies including a national Agenda 21 programme. This is linked to the establishment of appropriate international arrangements.

Agenda 21 is seen in India as an expression of a major and very significant commitment to the cause of sustainable development. The programme areas listed state what is necessary and desirable, even if not immediately possible. It is clear that full implementation cannot take place in the short term and also that both domestic and external resources would be needed. The concerns expressed in Agenda 21 have, in one form or the other, been an integral part of the planning process in India. The Plan documents bring out clearly the priorities, given the constraints of both material as well as financial resources. The environment policies, particularly the National Conservation Strategy, stress effective linkages being forged in different sectors.

The Planning Commission, involves both academics and the private sector in its consultation process. Voluntary organisations are also fully involved with the planning and implementation of the development programmes. India has a long tradition of voluntary effort and of involvement of all actors of development including women in the planning, design and implementation programmes.

The National Environment Council chaired by the Prime Minister, is the highest level policy making body on environmental issues. The Council consists of senior representatives of Central Ministries, Chief Ministers of States, representatives of Non-Governmental groups, distinguished scientists and academics. The Regional Offices of the Ministry of Environment and Forests, the Central Pollution Control Board, the Department of Ocean Development and finally the various divisions in the Ministry of Environment & Forests, such as the Impact Assessment, Research and Eco-regeneration, Environmental Information, Environment Education and the International Cooperation etc. form the appropriate loci for the critical areas identified for the capacity building exercises.

Though schemes exist for carrying out activities in the areas of Research and Ecoregeneration, Pollution Control, Coastal Zone Management, Environment Education, Training and Information and for monitoring of projects approved by the government, these schemes do not have built-in provisions for capacity building. The aspect of inter-relatedness amongst these activities needs greater emphasis. The object of the capacity building exercise would be to design a package of training and research programmes, equipment and expert services to raise the capability of the relevant target groups to achieve better results from their designated functions.

## Status Cont'd

There is a need to strengthen capacity building efforts at two levels viz. Environmental Policy and Planning, and Monitoring and Compliance. In the Policy and Planning area, focus needs to be on Environmental Economics, Environmental Indicators, Environmental Law, Research and Information Awareness. On the monitoring side, specific emphasis needs to be made in the Coastal Zone Management, Environmental Standards, Environmental Management of Mines, Industrial Siting and Zoning, etc.

These objectives would be achieved through the following components:

i) Improved environmental policy planning would be achieved by providing assistance to the Ministry of Environment and Forests and its affiliated institutions including the Central Pollution Control Board by upgrading the quality of Environmental Research and improving access to reliable environmental information, mainstreaming environmental economics including development and use of indicators and indices and updating and developing more appropriate environmental standards. Training in environmental law would be extended to industrial managers, communities and NGOs and legal research and education would be strengthened. A community based environmental decision making mechanism would be developed.

ii) For strengthening, monitoring and compliance in specific high priority environmental problem areas, support would be accorded to the Central Pollution Control Board, the Department of Ocean Development, the State Pollution Control Boards and the Regional Offices of Ministry of Environment and Forests. Such support would aim at mitigating the negative environmental impacts in the Mining Sector, the siting of industry to reduce pollution, better monitoring of ambient air quality and improvement in coastal and marine area management.

iii) Management would be supported by providing assistance to local communities and Non-Governmental Organisations for upgrading the National Environmental Awareness Campaign, expanding the Paryavaran Vahinis (Environmental Brigades Programme) and establishing on a pilot basis, an NGO Environmental Action Fund to support environmental monitoring and mitigation activities.

Capacity building in the form of skills, knowledge, technical cooperation and assistance is needed for developing countries to deal with principal challenges in the area of sustainable development on a long term basis. International community including UN agencies should assist the developing countries through exchange of scientific, technical data and experience as also transfer of environmentally sound technologies and the provision of financial assistance.

## AGENDA 21 CHAPTER 38: INTERNATIONAL INSTITUTIONAL ARRANGEMENTS

**Ch. 38: Brief summary of any particular UN System response affecting this country/state:** No information.

## AGENDA 21 CHAPTER 39: INTERNATIONAL LEGAL INSTRUMENTS AND MECHANISMS

**Ch. 39: International Legal Instruments are covered under the relevant sectoral chapters. This is a listing of major agreements/conventions (not already covered) entered into and relevant to Agenda 21:** In order to achieve sustainable development, it is imperative to address on a priority basis the principal environmental challenges as contained in Agenda 21, with reference to relevant social, economic and environmental aspects. Most international agreements are sector specific in nature, concluded at different times and at uneven stages of international knowledge and concern. Therefore, innovative approaches are required in the field of progressive development and codification of international environmental law.

International law derives from a number of sources, principal among which are international conventions or treaties, international customary law, and the general principles of law recognised by States. In recent years, each of these sources has displayed features of interest to international environmental law. The inherent reservation notwithstanding, treaties and conventions have made a major contribution to developing international environmental law in the last few years.

India has become a party to international conventions which contribute to environmental protection and sustainable development. India has ratified almost all multilateral environmental conventions including the recent ones such as Framework Convention on Climate Change (FCCC), Convention on Biodiversity, Convention on Straddling Fish and Highly Migratory Fish Stocks and Convention to Combat Desertification (CCD). Concrete actions have been taken to meet international obligations under these conventions to reaffirm India's commitment to pursue activities leading to sustainable development.

Consistent with national goals and objectives and using development planning process as a framework, activities and programmes have been initiated by the Government in the context of Agenda 21. These include legislation to enforce environmental protection, especially in the areas of Environmental Impact Assessment (EIA), pollution control, hazardous waste management, biodiversity conservation, etc.

The following representative cases decided by the Indian judiciary (Supreme Court of India and High Courts), in the recent years, on environment related matters, illustrate the importance given to environmental protection by the Indian legal system:

In Mathew Lukose Vs. Kerala State Pollution Control Board [1990 (2) Kerala Law Journal, page 717], the right to healthy environment is referred to as one of the fundamental rights. It also addresses the issues relating to the competing claims, i.e., the growth of industries and to define the outer limit of pollution so that it does not infringe the citizens right to a healthy environment. The court noted that "When the degree of pollution crosses the tolerance limits, it invades the rights... and it cannot pass the mustering right of the Constitution". While considering these competing claims the Court also considered the feasibility of an environment audit preceding the licensing of an industry. It also mooted the creation of a National Environment Agency with powers in areas of planning, enforcement and sanctions. It further noted that "An institutional perspective must prevail in these areas and related questions must be upgraded to concerns of national priority". This, according to it, is necessary, as "The world belongs to us in usufruct, but we owe a duty, to the posterity, to the unborn, to leave this world st least as beautiful as we found it".

In M.C. Mehta vs. Union of India {1996 (2) Scale (SP) Page 89}, the construction of the common Effluent Treatment Plants (CETPs) in the 28 industrial areas in Delhi has been dealt with. The Court also considered the issues relating to the expenditure involved in constructing these treatment plants. Considering the expenditure involved the Court took the view that the industries for whose benefits the treatment plants are being set up are bound to cooperate.

## Status Cont'd

In Subhash Kumar Vs. State of Bihar and Others {(1991) 1 SCC page 598}, the Supreme Court laid down the following Constitutional norms for controlling pollution: (a) Right to life is a fundamental right under Article 21 of the Constitution and it includes the right of enjoyment of pollution-free water and air for full enjoyment of life; (b) If anything endangers or impairs that quality of life in derogation of laws, a citizen has right to have recourse to Article 32 of the Constitution for removing the pollution of water or air which may be detrimental to the quality of life; and (c) A petition under Article 32 for the prevention of pollution is maintainable at the instance of affected persons or even by a group of social workers or journalists.

In M.C. Mehta Vs. Union of India 1996 (3) Scale (SP) page 58, the relocation of irimlc industries located near Taj Mahal, which is known as "Taj Trapezium", in order to preserve the world famous monument has been discussed. The Court sought a report from the National Environmental Engineering Research Institute (NEERI) as to decide whether it is necessary to relocate various industries located in Taj Trapezium. Considering the report from the NEERI, the Court outlined an elaborate plan to relocate the industries. Subsequent to the implementation of this decision, the Court sought to consider the following issues: (a) Whether all the industries operating in the Taj Trapezium are to be relocated irrespective of the nature of the industry that is hazardous/ noxious/polluting/non-polluting: (b) If the answer to the above question is in negative, then which type of industries are to be relocated. (c) Whether the Government of India agrees with the suggestion of the relocated outside the Taj Trapezium; and (d) Relocation scheme may be indicated. The industrial estates - within or outside the Taj Trapezium - where the industries can be shifted, may be indicated.

In Indian Council for Enviro-Legal Action, etc. Vs. Union of India and Others [1996 (2) Scale 44, page 73], the Court sought to frame special procedure for setting up chemical industries. The court stated, "The Central Government shall consider whether it would not be appropriate in the light of the experience gained, that chemical industries are treated as a category apart. No distinction should be made in this behalf as between a large scale industry and a small scale industry or medium scale industry. All chemical industries, whether big or small, should be allowed to be established only after taking into considerations all the environmental aspects and their functioning should be monitored closely to ensure that they do not pollute the environment around them. It appears that most of these industries are water-intensive industries. If so, the advisability of allowing the establishment of these industries in arid areas may also require examination."

## AGENDA 21 CHAPTER 40: INFORMATION FOR DECISION-MAKING

**This chapter is also covered under sectoral and other chapters of this profile. The matrix below gives an overview of how national authorities rate the available information for decision making.**

**Rating of available data and information suitable for decision-making**

| Agenda 21 Chapters | | Very good | Good | Some good data but many gaps | Poor | Remarks |
|---|---|---|---|---|---|---|
| 2. | International cooperation and trade | | | | | |
| 3. | Combating poverty | | | | | |
| 4. | Changing consumption patterns | | | | | |
| 5. | Demographic dynamics and sustainability | | | | | |
| 6. | Human health | | | | | |
| 7. | Human settlements | | | | | |
| 8. | Integrating E & D in decision-making | | | | | |
| 9. | Protection of the atmosphere | | | | | |
| 10. | Integrated planning and management of land resources | | | | | |
| 11. | Combating deforestation | | | | | |
| 12. | Combating desertification and drought | | | | | |
| 13. | Sustainable mountain development | | | | | |
| 14. | Sustainable agriculture and rural development | | | | | |
| 15. | Conservation of biological diversity | | | | | |
| 16. | Biotechnology | | | | | |
| 17. | Oceans, seas, coastal areas and their living resources | | | | | |
| 18. | Freshwater resources | | | | | |
| 19. | Toxic chemicals | | | | | |
| 20. | Hazardous wastes | | | | | |
| 21. | Solid wastes | | | | | |
| 22. | Radioactive wastes | | | | | |
| 24. | Women in sustainable development | | | | | |
| 25. | Children and youth | | | | | |
| 26. | Indigenous people | | | | | |
| 27. | Non-governmental organizations | | | | | |
| 28. | Local authorities | | | | | |
| 29. | Workers and trade unions | | | | | |
| 30. | Business and industry | | | | | |
| 31. | Scientific and technological community | | | | | |
| 32. | Farmers | | | | | |
| 33. | Financial resources and mechanisms | | | | | |
| 34. | Technology, cooperation and capacity-building | | | | | |
| 35. | Science for sustainable development | | | | | |
| 36. | Education, public awareness and training | | | | | |
| 37. | International cooperation for capacity-building | | | | | |
| 38. | International institutional arrangements | | | | | |
| 39. | International legal instruments | | | | | |
| 40. | Information for decision-making | | | | | |

## Additional Comments

The Government of India and the State Governments, through several of their organisations, have been collecting information on natural resources, production patterns and changing climatic and environmental conditions. These form the basis for the decision making system in the process of sustainable development. Various steps have been taken to develop capabilities in the development of information networks in both public and private sectors.

The National Information System for Science and Technology (NISSAT) facilitates coordination of information services in the country. It has helped in the setting up of national information centres in various sectors like leather technology, food technology, machine tools and production, drugs and pharmaceuticals, textiles, chemical and allied industries, advanced ceramics etc.

The Biotechnology Information System (BTIS) envisages establishment of BTIS Network and provision of bio-information to bridge inter-disciplinary gaps in information and establish links among scientists involved in research and development and manufacturing activities in India.

The ENVIS (Environment Information System) has the objectives of building up a repository and dissemination centre in Environmental Science and Engineering, and to provide national environmental information services to the users, originators, processors and disseminators of environmental information.

The NIC-Planning Commission Biomedical Information Services endeavours to provide online/ondisk medical information-to end users in hospitals, R&D in pharmaceuticals.

Within the ambit of Technology Information Forecasting and Assessment Council (TIFAC), an autonomous body set up by the Government, support has been provided in the setting up of databases on energy technologies and environmental technologies at the Tata Energy Research Institute (TERI), New Delhi and the National Chemical Laboratory (NCL), Pune respectively. The National Environmental Engineering Research Institute (NEERI), Nagpur has a project on the preparation of information package on cleaner technologies of industrial production. The experience gained in the establishment of information networks and databases including training of manpower and development of necessary skills to handle these systems is an important strength.

Some of the studies completed with support from TIFAC include areas like human settlements, industrial raw water treatment, industrial waste water treatment, water treatment technologies, technologies for disposal of thermal power station fly ash, energy conservation technologies (cement industry), energy saving technologies, biotechnology for waste water treatment, and technologies for the treatment of molasses based distillery effluents.

With a well developed space programme, India is fully capable of collating, collecting, analysing and utilising remote sensing data obtained through its own and international satellites. Some of the uses of remote sensing technology already far advanced in India include:

i) Efforts by the National Bureau of Soil Survey and Land Use Planning to use remote sensing techniques for development of GIS based upon soils, topography, and underground water resources; ii) The programme of the Forest Survey of India for using remote sensing to determine and monitor the forest cover and its status;

iii) The programme of the national Wastelands Development Board to map the wastelands in 146 districts which have more than 15 per cent of their areas under wastelands along with the areas that may be affected with reference to causative factors such as wind and water erosion.

Apart from remote sensing State Governments and Government of India collect other kinds of data. These include:

i) Ground surveys in respect of land resources through assessment of the physico-chemical properties of soil along with topography which also leads to the production of useful and necessary village level maps;

ii) A mammoth project of identification of water resources in the country undertaken by the Central Water Commission:

iii) The Agriculture Census and the Agriculture Input Survey which provide information on the classification of land, the objective to which that land is being utilised, the levels of application of inputs such as fertilisers, organic manure, etc.;

## Additional Comments Cont'd

iv) The State-wise data compiled by the Ministry of Rural Development on some of the basic rural indicators like the establishment of biogas plants which provide sources of alternative energy;
v) Traditional collection of data by the Registrar General of India, through the decennial census;
vi) Collection of data on health, mortality and morbidity indices, as well as data for the Physical Quality of Life Indices (PQLI) comprising education, food security, employment and earnings etc.;
vii) Lastly, in a large and populous country like India, collection of data based on complete sampling is not fully relevant in all cases. The expenditure both of resources and of time in the collection of such data might decrease its utility for effective decision-making. Hence, a National Sample Survey Organisation has been established to provide trends and useful indicators for decision-making. Recently, the NSSO has also commenced collection of data on a gender-desegregated basis to provide inputs about women's status and suggest mechanisms for improving their role as primary decision-makers and implementors.

Some of all this data generated is included as a part of Geographic Information System developed by the National Informatics Centre under the GISTNIC programme. The database is, however, yet to be fully synthesized and is presently available only to Government users.

India has a reasonably well developed informatics network with computers in both Government and in the private and public sectors. These are also connected through High Speed Optical Cables within themselves and with international networks. Connections through the use of Satellites for Very High Speed Data Transmission have also become a reality and India is able to effectively use the data that may be available on the international networks. It has been possible to have online access to various international databases and networks through DIOLOG, STN, EASYNET, ESA-IRS, etc. CD-ROM databases are also available from vendors like DIOLOG, UMI, SILVERPLATTER and others.

| STATISTICAL DATA/INDICATORS | | | | |
|---|---|---|---|---|
| | **1980** | **1993** | **Latest**<br>**199-** | |
| Number of telephones in use per 100 inhabitants | | | | |
| Other data | | | | |

**Selected Indicators 1950-51 to 1995-96**

| | 1950-51 | 1960-61 | 1970-71 | 1980-81 | 1988-89 | 1989-90 | 1990-91 | 1991-92 | 1992-93 | 1993-94 | 1994-95 | 1995-96 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ECONOMIC INDICATORS** GDP at factor cost | | | | | | | | | | | | |
| i) At current prices (Rs.million) | 89790 | 152540 | 397080 | 1224270 | 3527060 | 4086620 | 4778140 | 5527680 | 6307720 | 7318910 | 8583400 | 9857870# |
| ii) At 1980-81 prices (Rs.million) | 428710 | 629040 | 904260 | 1224270 | 1884610 | 2014530 | 2122530 | 2139830 | 2252680 | 2388640 | 2560950 | 2742090# |
| Per capita net national product, at 1980-81 prices (Rupees) | 1127 | 1350 | 1520 | 1630 | 2059 | 2157 | 2243 | 2334 | 2449 | 2334 | 2449 | 2573# |
| Index of industrial production (Base: triennium ending 1981-82) | 18.3@ | 36.2 | 65.3 | 100 | 180.9 | 196.4 | 212.6 | 213.9 | 218.9 | 232 | 253.7 | 283.3(P) |
| Gross domestic capital formation (as per cent of GDP) | 10.2 | 15.7 | 16.6 | 22.7 | 24.5 | 25.1 | 27.7 | 23.4 | 24 | 23.6 | 26 | 27.4# |
| Index of agricultural production (Base: trennium ending 1981-81) | 46.2 | 68.8 | 85.9 | 102.1 | 140 | 143 | 148.4 | 145.5 | 151.5 | 157.3 | 165 | 164.3 |
| Gross domestic savings (as percent of GDP) | 10.4 | 12.7 | 15.7 | 21.2 | 21.4 | 22.4 | 24.3 | 22.8 | 21.1 | 23.1 | 24.9 | 25.6# |
| OUTPUT | | | | | | | | | | | | |
| (a) Foodgrains (million tonnes) | 50.8 | 82 | 108.4 | 129.6 | 169.9 | 171 | 176.4 | 168.4 | 179.5 | 184.3 | 191.5 | 185.1(P) |
| (b) Finished Steel (million tonnes) | 1.04 | 2.39 | 4.64 | 6.82 | 12.84 | 13 | 13.53 | 14.33 | 15.2 | 15.1 | 17.8 | 21.4 |
| (c) Cement (million tonnes) | 2.7 | 8 | 14.3 | 18.6 | 44.3 | 45.8 | 48.8 | 51.7 | 54.7 | 57.8 | 62.4 | 69.3(P) |
| (d) Coal (including lignite) (million tonnes) | 32.3 | 55.2 | 76.3 | 119 | 207 | 213.7 | 225.5 | 243.8 | 254.9 | 264.1 | 273.1 | 292.3(P) |
| (e) Crude oil (million tonnes) | 0.3 | 0.5 | 6.8 | 10.5 | 32 | 34.1 | 33 | 30.4 | 27 | 27 | 32.2 | 35.1(P) |
| (f) Electricity generated (utilities only) (Billion KWH) | 5.1 | 16.9 | 55.8 | 110.8 | 221.4 | 245.4 | 264.3 | 287 | 301.1 | 323.5 | 351 | 380.1(P) |
| **Wholesale price index* (Base: 1981-82=100)** | 16.9 | 19.6 | 35.5 | 91.1 | 154.2 | 165.7 | 182.7 | 207.8 | 228.7 | 247.8 | 274.7 | 295.8 |

**Selected Indicators 1950-51 to 1995-96 Cont'd**

| | 1950-51 | 1960-61 | 1970-71 | 1980-81 | 1988-89 | 1989-90 | 1990-91 | 1991-92 | 1992-93 | 1993-94 | 1994-95 | 1995-96 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Consumer Price Index (Base: 1982 = 100)@@ | 17 | 21 | 38 | 81 | 163 | 173 | 193 | 219 | 240 | 258 | 284 | 313 |
| Plan outlay (Rs. million) | 2600## | 11170 | 25240 | 150230 | 486450 | 556300 | 583690 | 647510 | 728520 | 880810 | 1062040 (RE) | 1198980 (RE) |
| Centre's budgetary deficit (Rs. million) | (-)330## | -1170 | 2850 | 25760 | 56420 | 105920 | 113470 | 68550 | 123120 | 109600 | 9610 | 76000 (RE) |
| FOREIGN TRADE | | | | | | | | | | | | |
| (i) Exports | | | | | | | | | | | | |
| Rs. million | 6060 | 6420 | 15350 | 67110 | 202320 | 276580 | 325530 | 440410 | 536880 | 697510 | 826740 | 1063530 |
| US $ million | 1269 | 1346 | 2031 | 8486 | 13970 | 16612 | 18143 | 17865 | 18537 | 22238 | 26330 | 31797 |
| (ii) Imports | | | | | | | | | | | | |
| Rs. million | 6080 | 11220 | 16340 | 125490 | 282350 | 353280 | 431980 | 478510 | 633750 | 731010 | 899710 | 1216780 |
| US $ million | 1273 | 2353 | 2162 | 15869 | 19497 | 21219 | 24075 | 19411 | 21882 | 23306 | 28654 | 36678 |
| Foreign exchange reserves (excluding gold and SDRs): | | | | | | | | | | | | |
| Rs. million | 9110 | 1860 | 4380 | 48220 | 66050 | 57870 | 43880 | 145780 | 201400 | 472870 | 660060 | 584460 |
| US $ million | 1914 | 390 | 584 | 5850 | 4226 | 3368 | 2236 | 5631 | 6434 | 15068 | 20809 | 17044 |
| SOCIAL INDICATORS | | | | | | | | | | | | |
| Population (million)[a] | 361.1 | 439.2 | 548.2 | 683.3 | 811.3 | 827.4 | 846.3 | 863.2[b] | 880.4[b] | 898[b] | 915.9[b] | |
| Birth Rate (per 1000)[c] | 39.9 | 41.7 | 36.9 | 33.9 | 30.6 | 30.2 | 29.5 | 29.2 | 28.7 | 28.7P | 28.3P | |
| Death rate (per 1000)[c] | 27.4 | 22.8 | 14.9 | 12.5 | 10.3 | 9.7 | 9.8 | 10.1 | 9.3 | 9.3P | 9.0P | -- |
| Life expectancy at birth (in yrs[d] | | | | | | | | | | | | -- |
| (a) Male<br>(b) Female | 32.4<br>31.7 | 41.9<br>40.6 | 46.4<br>44.7 | 50.9<br>50 | 57.7<br>58.1 | 58.1<br>58.6 | 58.6<br>59 | -- | 60.4<br>61.2 | -- | -- | -- |
| TOTAL | 32.1 | 41.3 | 45.6 | 50.4 | 57.7 | 58.3 | 58.7 | -- | 60.8 | -- | -- | -- |

| Selected Indiators 1950-51 to 1995-96 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1950-51 | 1960-61 | 1970-71 | 1980-81 | 1988-89 | 1989-90 | 1990-91 | 1991-92 | 1992-93 | 1993-94 | 1994-95 | 1995-96 |
| **EDUCATION** | | | | | | | | | | | | |
| **Literacy rate (percentage)[f]** | | | | | | | | | | | | |
| **(a) Male** | 27.16 | 40.4 | 45.95 | 56.37 | *** | *** | 64.1 | *** | *** | *** | *** | *** |
| **(b) Female** | 8.86 | 15.34 | 21.97 | 29.75 | *** | *** | 39.3 | *** | *** | *** | *** | *** |
| **Total** | 18.33 | 28.31 | 34.45 | 43.56 | *** | *** | 52.2 | *** | *** | *** | *** | *** |
| **HEALTH & FAMILY WELFARE** | | | | | | | | | | | | |
| **Registered medical practitioners (RMP) (thousand)** | 61.8 | 83.7 | 151.1 | 268.7 | 368.6 | 381.9 | 394 | 410.8 | *** | *** | *** | *** |
| **RMP per 10,000 population** | 1.7 | 1.9 | 2.8 | 3.9 | 4.5 | 4.6 | 4.7 | 4.8 | *** | *** | *** | *** |
| **Beds (all types)** per 10,000** | 3.2 | 5.2 | 6.4 | 8.3 | 9.5 | 9.4 | 9.6 | *** | *** | *** | *** | *** |

@ Related to the calender year 1950.

@@ Figures for the period up to 1988-89 derived by converting indices on earlier bases into base 1982 = 100.

# Quick estimates.

## Relates to 1951-52.

* Figures for the period up to 1980-81 derived by converting the indices on earlier bases into base 1980-81 = 100.

** Includes beds in hospitals, dispensaries, P.H.Cs, clinics, sanatoriums, etc.

RE Revised estimates.

*** Not available.

P Provisional.

NOTES

a As on March 1, 1951 and so on up to 1980-81 and 1990-91 as per Census of India. Figures for the period 1988 to 1990 are based on adjusted projections of the Standing Committee of Experts on Population Projections.

b Relate to March 1, 1992, 1993, 1994, and 1995 based on projected estimates by Technical Group on Population Projections (August 1996) set up under the Chairmanship f Registrar General of India.

c Data for 1950-51, 1960-61 , 1970-71 and 1980-81 are census estimates and relate to decades 1941-50, 1951-60, 1961-70 and 1971-80 respectively. The estimates for 1988-89 onwards are based on the Sample Registration System (SRS).

d Data for 1950-51, 1960-61, 1970-71 and 1980-81 relate to the decades 1941-50, 1951-60, 1961-70 and 1971-80 respectively, centred at mid-point of the decade, i.e. 1946, 1956, 1966 and 1976. The estimates for 1988-89, 1989-90 and 1990-91 refer to the periods, 1986-90, 1987-91 and 1988-92 respectively. For 1992-93, it is based on the extrapolated values of the Standing Committee of Experts on Population Projections centred at June 1992.

e Data for 1950-51, 1960-61, 1970-71, 1980-81 and 1990-91 relate to the years 1951, 1961, 1971, 1981 and 1991 respectively. The figures for 1951, 1961 and 1971 relate to population aged 5 years and above and those for 1981 and 1991 relate to population aged 7 years and above. All India literacy rate exclude Assam for 1981 and J&K for 1991.

f Relate to calender year e.g., 1950-51 pertains to December 1951 and so on.